Standards of Compliance for Fish Processors

based on

Fish Inspection Act,1990 and Quality Control Regulation (Reg. 456)

Ontario Ministry of Natural Resources
Fish and Wildlife Branch
Peterborough, ON
September, 2005; Revised April, 2007

2007, Queen's Printer for Ontario
Printed in Ontario, Canada
(0.1 k P.R. 07 05 15)
MNR 51974
ISBN 978-1-4249-4389-0

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Bulk orders may involve charges.

Ontario Ministry of Natural Resources
Fisheries Section, Fish & Wildlife Branch
300 Water Street, Peterborough
Ontario, K9J 8M5

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1.0 Introduction

The government of Ontario is continually working to strengthen the province's food safety system, by updating standards and food safety programs, and by using new scientific knowledge to minimize food safety risks. The Ministry of Natural Resources has legislative responsibility for the provincial *Fish Inspection Act* and has worked with the Ontario Ministry of Agriculture and Food to develop a food fish safety program based on the *Act* and associated regulations.

This document has been produced for the purpose of:

- Documenting food safety standards to ensure that fish and fish products produced in Ontario are wholesome and suitable for human consumption.

- Facilitating the audit of non-federally registered fish processing plants (NFRFP) to ensure the processing of fish and fish products in the province of Ontario meet the requirements of the provincial *Fish Inspection Act* and *Quality Control Regulation (O.Reg 456/1990)* under this Act.

- Documenting plant construction and design; waste handling and disposal; water potability; sanitation; equipment and maintenance; pest control; personal hygiene; product flow; packaging; labeling; and record keeping requirements and standards to assist fish processors in complying with the *Fish Inspection Act* and associated Regulations.

2.0 Application of Standards

These standards are applicable to operations that produce, process, or distribute fish and fish products in Ontario. To ensure safe fish and fish products, national and international codes of practice for processing, handling, personal hygiene, storage and transportation have been incorporated in these standards of compliance. The conformance criteria are derived from, or are based on, internationally and nationally recognized science and knowledge based standards.

These standards will be applied by trained Auditors to assess an operation's compliance with the *Fish Inspection Act* and capability to produce wholesome fish and fish products suitable for human consumption. The Auditor will review results of the audit with operators and where necessary identify any deficiencies and timelines for corrective action(s) to ensure compliance with the *Fish Inspection Act* and the implementation of good manufacturing practices to safeguard the wholesomeness of fish and fish products. Follow-up inspections will be used to ensure corrective measures have been acted on.

A comprehensive list of web sites that provide current information on food safety, good manufacturing practices, and training and education materials for safe food fish production is presented in Appendix 2.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.01.01.01**
ELEMENT:	**Health of Food Handlers**
FACTOR:	Employee Hygiene
AREA:	Sanitary Operating Procedures
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.53.

" No person who,
(a) is known to be suffering from a communicable disease;
(b) is a known carrier of a communicable disease; or
(c) has an infected wound or open lesion on any part of his or her body,
shall be employed in any working area of an establishment"

Rationale: Employees who are suffering from communicable diseases, or are known to be carriers of communicable diseases are a potential source of microbial contamination, and must not be permitted to handle food in any capacity. Infected wounds or open lesions on the body can also become a source of microbial contamination, and persons having such wounds or lesions must not be allowed to work in any food handling areas, unless the injury is treated and completely protected by a secure, waterproof covering.

*The standard for **health of food handlers** will be met when:*

(FA.01.01.01.01)	Persons who are infected with, or carry a communicable disease are not permitted to handle food in any capacity.
(FA.01.01.01.02)	Persons who have an infected wound or open lesion are not permitted to work in any food handling areas unless the injury is treated and completely protected by a secure, waterproof covering.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.01.01.02**
ELEMENT:	**Personal Hygienic Practices**
FACTOR:	Employee Hygiene
AREA:	Sanitary Operating Procedures
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.57.

"No person in an establishment shall smoke or spit in a working area"

Rationale: Humans are an important source of food contamination through the handling of food. Personal behaviour that could result in the contamination of fish, such as smoking, use of tobacco, eating or drinking any substance other than water from a drinking fountain, or chewing gum are prohibited in any area of an establishment where food is handled.

Tags, pins, cords, or other objects that will subsequently be handled by a plant employee or directly or indirectly contact fish or fish products should not be held in the mouths of plant personnel.

*The standard for **personal hygienic practices** will be met when:*

(FA.01.01.02.01) Plant staff do not smoke, use tobacco, spit, chew gum, or eat or drink any substance other than water from a drinking fountain while in food handling areas.

(FA.01.01.02.02) No objects, including tags, clips and toothpicks, are held in employees' mouths.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.01.01.03**
ELEMENT:	**Reporting of Illness or Disease**
FACTOR:	Employee Hygiene
AREA:	Sanitary Operating Procedures
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.53.

" No person who,
(a) is known to be suffering from a communicable disease;
(b) is a known carrier of a communicable disease; or
(c) has an infected wound or open lesion on any part of his or her body,
shall be employed in any working area of an establishment"

Rationale: Plant managers must have a written policy requiring any person who is known to be suffering from, or a carrier of a communicable disease or illness, to report their condition or symptoms of their condition to management. This will allow workers to be redeployed to positions that will not involve food contact.

In addition, a written policy is necessary to ensure that employees report any cut, wound or lesion that could possibly cause direct or indirect contamination of food or food surfaces to management, so that the wound can be properly treated and covered.

*The standard for **reporting for illness or disease** will be met when:*

(FA.01.01.03.01) The operator has a documented policy requiring that all employees report contagious illness, and remain off work until declared fit to handle fish.

(FA.01.01.03.02) The operator has a documented policy and procedure requiring that all employees report wounds and infected lesions, and requiring that such wounds and lesions are covered with a secure waterproof covering.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.01.01.04**
ELEMENT:	**Hand Washing Practices**
FACTOR:	Employee Hygiene
AREA:	Sanitary Operating Procedures
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.54.

"Every person engaged in handling or processing fish in an establishment shall wash his or her hands thoroughly with warm water and liquid or powdered soap immediately before commencing each work shift and after each absence from duty."

Rationale: It is essential that employees engaged in handling or processing fish practice good hygiene and do not let their hands become a source of contamination. All persons entering a room where fish is being handled must be required to thoroughly wash their hands with warm water and soap. Hands must be washed before commencing each work shift, and when returning from each absence from duty (using the toilet or leaving the processing area for any reason). Hands must also be washed after handling contaminated material, and in-between the handling of incompatible fish and fish products.

Unhygienic practices, such as spitting, scratching the head, placing the fingers in or about the mouth or nose, or indiscriminate and unprotected sneezing or coughing, should also be prohibited in any part of the plant where food is handled. Employee training and supervision to ensure people wash their hands after touching the face, sneezing or coughing. Training to cough or sneeze into the shoulder is helpful in minimizing contamination.

*The standard for **hand washing practices** will be met when:*

(FA.01.01.04.01)	Employees thoroughly wash their hands with warm water and soap before commencing each work shift, when returning from each absence of duty, after handling contaminated material, and between the handling of incompatible fish and fish products.
(FA.01.01.04.02)	While handling fish products, employees wash their hands after sneezing, coughing, or contacting the face or hair.
(FA.01.01.04.03)	The plant operator effectively supervises the hygienic procedures conducted by plant staff.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.01.02.01**
ELEMENT:	**Food Handlers Training**
FACTOR:	Food Handler Training
AREA:	Sanitary Operating Procedures
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.53.

"No person who,
(a) is known to be suffering from a communicable disease;
(b) is a known carrier of a communicable disease; or
(c) has an infected wound or open lesion on any part of his or her body, shall be employed in any working area of an establishment"

Rationale: A written, formal training program is essential. The operator may choose to develop a program internally, or use one such as The Food Handler Training Course developed by OMAF and OIMP or one similar to it. If the course is developed internally, it should be reviewed by Ministry staff to ensure that it meets requirements.

Training of food handlers in personal hygiene and food handling practices is essential to ensure that workers understand the practices necessary to prevent contamination or deterioration of food. Basic training is necessary regarding food hygiene and its relation to public health, personal hygienic practices such as hand-washing, use of protective clothing, use of equipment and its sanitation, health requirements of personnel and legislative requirements. Basic sanitation and handling procedures, including prevention of contamination and importance of temperature control are also essential topics.

*The standard for **employee training** will be met when:*

(FA.01.02.01.01)	The operator has a formal training program in hygienic food handling practices, health policy, and wound policy.
(FA.01.02.01.02)	Employees receive training appropriate to their duties, so that Fish Audit is not compromised by their actions.
(FA.01.02.01.03)	Training of individual employees is recorded.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.01.03.01**
ELEMENT:	**Personal Adornments, Jewellery and Other Objects**
FACTOR:	Employee Clothing
AREA:	Sanitary Operating Procedures
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.55.

"No employee who handles fish with his or her bare hands in an establishment shall wear finger-nail polish."

Rationale: Employees who handle fish with their bare hands must not be permitted to wear finger-nail polish, because it can chip and become incorporated into food, and contaminate food products. Plant employees engaged in the handling of fish or fish products should not be permitted to wear jewellery, because it has the potential to cause physical and microbial contamination of food products. Jewellery items that cannot be removed (medic alert devices) may be worn, but must be adequately covered. Earrings or other facial adornments may fall into food products. Simple covering with a hairnet is not sufficient to ensure security. Covering rings and bracelets with tape may add to the potential for contamination.

Other items that could fall into food products such as pens, pencils and thermometers must not be kept in areas where they are likely to fall out such as coat and shirt pockets.

Fingernail polish, jewellery, pens and others present not only the potential for physical contamination or adulteration of food, but also have the potential of carrying microbial contamination from people into food products.

*The standard for **avoidance of personal adornments** will be met when:*

(FA.01.03.01.01)	Employees handling fish with their bare hands do not wear finger-nail polish.
(FA.01.03.01.02)	Staff do not wear jewellery in food handling areas of the plant unless it is covered in an acceptable manner.
(FA.01.03.01.03)	Jewellery is not kept in fish/food handling areas.
(FA.01.03.01.04)	Items such as pens, pencils and thermometers are not kept in employees' coat or shirt pockets.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.01.03.02**
ELEMENT:	**Protective Clothing**
FACTOR:	Employee Clothing
AREA:	Sanitary Operating Procedures
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.74(1), (2), (3), (4).

(1) "Except for a filleter, skinner, scaler, handler of round or dressed fish or a worker in a frozen storage room in a fresh-fish, freezing or semi-preserving establishment, every employee engaged in a fish processing operation in a cannery or a fresh-fish, freezing or semi-preserving establishment shall wear a clean coverall, smock or coat and headgear that completely covers the hair."

(2) "All protective outer garments worn by an employee in a fish processing operation in a cannery shall be kept thoroughly cleaned."

(3) "A filleter, skinner, scaler or handler of round or dressed fish in a fresh-fish, freezing or semi-preserving establishment shall wear clean outer garments and headgear that completely covers the hair."

(4) "A worker in a frozen storage room in a fresh-fish, freezing or semi-preserving establishment shall wear clean outer garments."

Rationale: Employee/visitor clothing and hair must not be allowed to become a potential source of contamination. Where appropriate, employees/visitors should wear protective clothing, head covering, gloves, footwear or aprons while working in/visiting rooms where fish and fish products are handled. Protective clothing must be cleanable, unless designed to be disposable. For hygienic reasons, coveralls are discouraged. Protective clothing should be removed immediately after leaving a processing area, and should be cleaned and stored under sanitary conditions. Storage of protective clothing should be separate from employee street clothing. Protective clothing must be kept in a good state of repair.

*The standard for **protective clothing** will be met when:*

(FA.01.03.02.01) Employees are provided with clean, suitable protective clothing.

(FA.01.03.02.02) Street clothing worn under protective clothing does not contact food products, directly or indirectly.

(FA.01.03.02.03) Protective clothing is removed immediately after leaving a processing area and is not worn in lunch rooms, lavatories, or other non-production areas.

(FA.01.03.02.04) Protective clothing is stored under sanitary conditions, separate from employee street clothing, and separate from lavatories and welfare rooms.

(FA.01.03.02.05) Protective clothing is kept in a good state of repair.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.01.03.03**
ELEMENT:	**Waterproof Garments**
FACTOR:	Employee Clothing
AREA:	Sanitary Operating Procedures
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.56.

"All waterproof garments in an establishment shall be thoroughly cleaned after each work shift."

Rationale: Employees engaged in food handling must maintain a high degree of personal cleanliness. All waterproof garments must be able to be effectively cleaned. Waterproof garments worn during each work shift must be thoroughly cleaned after each shift, in order to prevent dirt from drying and caking on. Appropriate equipment to clean and disinfect waterproof garments must be provided, including hand dips and foot dips to clean waterproof gloves and boots. Waterproof garments must be stored under sanitary conditions.

*The standard for **waterproof garments** will be met when:*

(FA.01.03.03.01) Waterproof garments are thoroughly cleaned after each work shift.

(FA.01.03.03.02) Appropriate equipment to clean and sanitize waterproof garments is provided.

(FA.01.03.03.03) Waterproof garments are stored under sanitary conditions.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.01.03.04**
ELEMENT:	**Use of Hair Coverings**
FACTOR:	Employee Clothing
AREA:	Sanitary Operating Procedures
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.74 (1) and (3).

(1) "Except for a filleter, skinner, scaler, handler of round or dressed fish or a worker in a frozen storage room in a fresh-fish, freezing or semi-preserving establishment, every employee engaged in a fish processing operation in a cannery or a fresh-fish, freezing or semi-preserving establishment shall wear a clean coverall, smock, or coat and headgear that completely covers the hair."

(3) "A filleter, skinner, scaler or handler of round or dressed fish in a fresh-fish, freezing or semi-preserving establishment shall wear clean outer garments and headgear that completely covers the hair."

Rationale: It is crucial to eliminate all vectors of pathogenic organisms capable of contaminating fish or fish products. Exposed hair of individuals engaged in handling fish or fish products in a plant serve as a potential source of pathogenic micro-organisms. In consequence, the plant operator is responsible for ensuring that all individuals in product handling areas of a plant are wearing a sanitary hair covering such as a hair net, beard net, or any other effective hair-restraining device. Hair must be completely and effectively covered. This requirement applies to all individuals present in these areas, including visitors, whether they are actually engaged in product handling or not.

*The standard for the **use of hair coverings** will be met when:*

(FA.01.03.04.01) Staff in the food handling areas wear sanitary hair coverings which covers hair completely.

(FA.01.03.04.02) Hairnets worn by plant staff are clean, have sufficiently fine mesh to restrain hair, and are in an acceptable condition.

(FA.01.03.04.03) All facial hair, with the exception of a neatly trimmed moustache, are covered.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.01.03.05**
ELEMENT:	**Use of Gloves**
FACTOR:	Employee Clothing
AREA:	Sanitary Operating Procedures
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.41, s.73.

s. 41 "Every cannery and every fresh-fish, freezing or semi-preserving establishment shall be provided with facilities for disinfecting the protective hand coverings used in processing areas".

s. 73 "All protective hand coverings worn by employees in any processing area in a cannery or a fresh-fish, freezing or semi-preserving establishment shall be disinfected immediately after each break in a work shift and at the end of every work shift".

Rationale: Gloves are worn for many purposes in a processing plant. Workers may require them for safety, to protect themselves from knife cuts or other injuries, cold conditions or fish, or to facilitate the grip on slippery products. Gloves are also useful barriers for personal protection against food borne pathogens. If used correctly, they are useful in preserving the integrity and safety of the food product.

Gloves, when misused, can be a source of contamination, if they are soiled by contact with contaminated surfaces. If workers who wear gloves do not also wash their hands, they can be a source of contamination when punctured or cut. Even though hands may be washed, resident skin bacteria will multiply in the warm, moist environment inside a glove, and contamination may be spread when the glove is punctured, or removed and placed on a product or product contact surface.

Gloves must always be clean and sanitized when used for handling fish products, and facilities must be available to ensure that they can be frequently washed and cleaned. Gloves can be come a source of cross-contamination, and employees must be trained to wash or change gloves when in contact with contaminated material.

*The standard for **glove use and handling** will be met when:*

(FA.01.03.05.01) Employees wash hands before putting gloves on. Used gloves are not left on work tables or other product contact surfaces during breaks.

(FA.01.03.05.02) If cotton gloves are used for direct product contact, they are changed on an hourly basis, and all cotton gloves are laundered and sanitized with an approved sanitizer before use.

(FA.01.03.05.03) All gloves are washed and sanitized when contaminated, at every work break, and at the end of every work shift.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.01.01**
ELEMENT:	**Construction in Working Areas**
FACTOR:	Construction of Floors
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.23.

"The surface of a floor in a wet working area of an establishment shall be sloped for drainage purposes and shall be constructed of durable and impervious material that permits rapid disposal of waste and that can be readily cleaned."

Rationale: It is essential that all floors in wet working areas (processing, receiving and holding) be constructed of materials that are smooth, impervious to moisture, non-absorbent and non-toxic such as dense, acid resisting, non-dusting and water-proof concrete, masonry floor tile, vitrified bricks or approved synthetic materials. Linoleum and other similar floor coverings are not acceptable, as they offer significant cleaning and sanitizing challenges.

Floors must be durable for the activities that are carried out within the establishment, and must be easy to clean and disinfect.

*The standard for **construction of floors** will be met when:*

(FA.02.01.01.01) Floors in product handling and storage areas are constructed of approved material that is smooth, durable, impervious to moisture, non-absorbent, non-toxic.

(FA.02.01.01.02) Floors are easy to clean and disinfect.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.01.02**
ELEMENT:	**Adequate Slope for Drainage**
FACTOR:	Construction of Floors
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.23.

"The surface of a floor in a wet working area of an establishment shall be sloped for drainage purposes and shall be constructed of durable and impervious material that permits rapid disposal of waste and that can be readily cleaned."

Rationale: It is essential that floors in wet working areas (processing, receiving and holding) be sloped sufficiently to facilitate drainage. A slope of 1% to 2% (1 – 2 cm/metre) should be adequate. Floors should slope uniformly to drains so that liquids do not accumulate.

The standard for **adequate slope for drainage** will be met when:

(FA.02.01.02.01) Floors are sloped to provide adequate drainage. During operations, there is no standing water or pooling. Where standing water or pooling occurs, it is removed regularly in a sanitary manner.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.02.01**
ELEMENT:	**Location, Size and Distribution**
FACTOR:	Construction of Drains
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.25.

"Drains in an establishment shall be of a type and size sufficient to carry off process effluents and water from cleaning operations and shall be equipped with traps or other devices to prevent the entry of gases or vermin into the establishment through the drains."

Rationale: It is essential that all rooms, processing and storage areas be provided with drains to facilitate continued disposal of process effluents and cleaning water in those areas. Drains must be of sufficient size and quantity to carry off any processing effluent without overflowing. A floor plan must be designed to determine the drainage required the size of the drains, and appropriate location and number of drain inlets. Drains, at a minimum, should meet the Ontario Building Code requirements. It is recommended that all drain lines be sloped at least 2 cm per meter and have not less than 10 cm inside diameter, be deep-seal trapped, properly vented to the outside air, and equipped with effective rodent screens. Drain inlets should be at least 30 x 30 cm or equivalent, with a minimum free area of 30% of the total. Drain covers shall be provided with apertures having a minimum size of 4 cm^2.

The standard for drain **location, size and distribution** will be met when:

(FA.02.02.01.01) Each processing and product storage room is equipped with floor drains which have sufficient capacity to quickly remove waste water.

(FA.02.02.01.02) Floor and other drain lines in operational areas do not connect with sanitary sewer lines within the plant.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.02.02**
ELEMENT:	**Construction**
FACTOR:	Construction of Drains
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.25.

"Drains in an establishment shall be of a type and size sufficient to carry off process effluents and water from cleaning operations and shall be equipped with traps or other devices to prevent the entry of gases or vermin into the establishment through the drains."

Rationale: It is essential that drains do not become a pathway of entry for insects, animal pests, gases or any other contaminating substances. Floor drains should have removable covers or screens that are constructed of metal or other acceptable, non-corrodible materials, to prevent the entry of insects or animal pests. To prevent backflow of sewage and gases, drains should be trapped, vented and equipped with gates. Drain inlets should be at least 30 x 30 cm or equivalent, with a minimum free area of 30% of the total. Drain covers shall be provided with apertures having a minimum size of 4 cm^2.

*The standard for **drain construction** will be met when:*

(FA.02.02.02.01) Drains are covered with corrosion resistant removable covers and screens. Drain covers have openings which permit removal of waste water without the potential for becoming plugged with organic material.

(FA.02.02.02.02) Drains are trapped, vented and equipped with gates to prevent backflow.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.03.01**
ELEMENT:	**Overhead Pipes**
FACTOR:	Processing Environment
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.39.

"No cannery and no fresh-fish, freezing or semi-preserving establishment shall have exposed pipe over any working surface on which fish is processed."

Rationale: Condensation on overhead pipes and other structures is a significant hazard. Water formed as a condensate will often carry bacteria and debris found on overhead structures into the product. Many species of bacteria and fungi will reside on cold, moist surfaces. While condensate water may appear to be clear and harmless, it is often laden with micro-organisms, dust and debris.

Un-insulated pipes may drip water droplets onto product or product contact surfaces. Improperly insulated ceiling panels may also be a problem. Any gap in panels where there may be a break in insulation or vapor barrier can lead to the formation of condensation. Heavy dripping from a ceiling may indicate a more serious structural problem.

When a beam or other structure is located directly in front of the refrigeration coils, cold air blowing on those structures will produce condensation. Strategic location of refrigeration units relative to other structures is an important consideration when designing or renovating a cooler or refrigerated processing room.

*The standard for **overhead pipes** will be met when:*

(FA.02.03.01.01) Where possible, pipes are not located over processing or working surfaces.

(FA.02.03.01.02) Pipes over processing areas are covered with approved insulation or other approved means of preventing condensation from dripping onto product or product contact surfaces.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.04.01**
ELEMENT:	**Construction**
FACTOR:	Construction of Walls
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.26.

"The inside surfaces of walls in a wet working area of an establishment shall be constructed of smooth, durable, waterproof and light-colored material that can be thoroughly cleaned up to a height of not less than four feet"

Rationale: Walls in wet working areas (processing, receiving and holding) must be constructed of materials that are impervious to moisture, non-absorbent and non-toxic such as prefabricated panels, glazed tile, smooth steel, trowelled cement plaster or other approved materials. Up to a height that is appropriate for the operation but no less than four feet, walls should be smooth, easy to clean and disinfect, and light-coloured to promote sanitation and increase light levels within the establishment.
Doors and door frames are a significant part of the structure, and must meet the same standards of construction. Doors and fittings (hinges, handles and latches) must be made of approved materials, designed and installed so that they can be easily cleaned and sanitized. Where possible, door handles should be eliminated, so that doors can be pushed open with minimal or no hand contact. Where door handles are needed, they should be one piece construction. Door knobs and similar devices are difficult to clean and maintain.

*The standard for **wall and door construction** will be met when:*

(FA.02.04.01.01)	Walls, doors and door frames in fish handling and storage areas are constructed of approved materials that are light coloured, smooth, durable, impervious to moisture, non-absorbent and non-toxic, and easy to clean and disinfect.
(FA.02.04.01.02)	Doors and door frames are of sufficient height and width for the operation, and frames are sealed to the surrounding wall.
(FA.02.04.01.03)	Door hardware is made of approved materials and is easy to clean and maintain.
(FA.02.04.01.04)	Doors, door frames and hardware are clean and in good condition.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.04.02**
ELEMENT:	**Coving**
FACTOR:	Construction of Walls
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.26.

"The inside surfaces of walls in a wet working area of an establishment shall be constructed of smooth, durable, waterproof and light-coloured material that can be thoroughly cleaned up to a height of not less than four feet".

Rationale: In order to ensure that walls are waterproof and to facilitate cleaning and disinfection, all corners and wall-floor junctions must be sealed and coved or rounded. The coving should have a radius of at least 2.5 cm, and provide adequate sealing of wall to floor.

*The standard for **coving** will be met when:*

(FA.02.04.02.01) All corners and wall-floor junctions are sealed and coved in an acceptable manner.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.05.01**
ELEMENT:	**Construction**
FACTOR:	Construction of Ceilings
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.27.

"Every room in an establishment in which fish is processed shall have a ceiling that is free from cracks, crevices and open joints and is constructed of smooth, light-coloured material that can be readily cleaned."

Rationale: To promote acceptable sanitation practices, it is essential that ceilings be free from any cracks, crevices or open joints that could harbour dirt, condensation and mould growth. Ceilings should be smooth so that they are easy to clean and do not become a source of shedding particles. Ceilings should be light-coloured to promote sanitation and increase light levels within the establishment. Construction materials must be approved for use.

The use of T-Bar ceilings is to be discouraged because of the many gaps, crevices and seams which are very difficult to maintain and clean. Panels in a T-bar system do not stay in place and will sag over time, creating a ceiling which cannot be cleaned on its underside, and which will allow debris and dirt accumulated on its upper side to fall onto processing surfaces.

There must be sufficient ceiling height (minimum 3 m.) to allow for adequate air movement and ventilation, to minimize the formation of condensation, to allow for ease of movement of equipment, and to allow for adequate placement of lighting fixtures for effective distribution of light.

*The standard for **ceiling construction** will be met when:*

(FA.02.05.01.01) Ceilings are constructed of approved materials that are light coloured, smooth, durable, impervious to moisture, non-absorbent, non-toxic, and easy to clean and disinfect.

(FA.02.05.01.02) Ceilings are free from cracks, crevices and open joints.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.05.02**
ELEMENT:	**Height**
FACTOR:	Construction of Ceilings
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Facilities Inspection Manual, CFIA (Canadian Food Inspection Agency's) Ch. 5, Subject 1. 1.5 Ceilings and Overhead Fixtures

"Ceilings shall be constructed of smooth, non-absorbent, durable and non-toxic materials that are light-coloured, washable, of a height acceptable to the president of the agency and maintained in a sound condition for ease of cleaning and disinfection".

Rationale: It is essential that ceilings in fish processing establishments be of sufficient height to accommodate the operations carried out within the area. A ceiling height of about 3 metres (10 feet) or greater has been found to be suitable because it allows for ease of operation, movement of equipment, and allows the installation of equipment that requires elevated ceilings. A high ceiling also helps the establishment to be well lit and ventilated. Where ceiling heights are lower than recommended, ventilation, lighting and sanitation must be maintained to ensure a safe food processing environment.

The standard for ***ceiling height*** will be met when:

(FA.02.05.02.01) Ceilings in each room are of acceptable height (at least 3 m.) for the operations carried out, and allow for adequate lighting and ventilation.

(FA.02.05.02.02) Where ceiling height is less than 3 m., there is provision for adequate ventilation, lighting and sanitation.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.06.01**
ELEMENT:	**Adequacy and Direction of Airflow**
FACTOR:	Ventilation
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.28.

"Every establishment shall be equipped with a natural or mechanical ventilation system that will provide clean air, remove undesirable odours, steam and smoke and prevent condensation in rooms where work is performed."

Rationale: It is essential that the ventilation system within an establishment be designed and constructed to provide air exchange sufficient to remove undesirable odours, dust, smoke and contaminated air from the establishment. The ventilation system must also remove moisture from the air to prevent condensation from contaminating walls and equipment. Any openings for ventilation should be covered with animal and insect-proof screens or similar devices, to prevent the ventilation system from becoming a point of entry for small animals and insects. Screens should be easily removable for cleaning purposes.

It is essential that air not be allowed to flow from contaminated areas to clean areas. Air should flow from the cleanest area to less clean areas.

*The standard for **adequacy of ventilation** will be met when:*

(FA.02.06.01.01)	Each room is equipped with ventilation which is acceptable for the activity being conducted, and is capable of removing undesirable odours, steam and smoke.
(FA.02.06.01.02)	The ventilation system directs air flow from the cleanest to the least clean areas so that air from contaminated areas does not flow into processing rooms.
(FA.02.06.01.03)	Openings for ventilation are covered with animal and insect-proof screens or similar devices that are easy to remove for cleaning purposes.
(FA.02.06.01.04)	Ventilation in processing and refrigerated areas is such that there is no condensation on ceilings, other overhead structures, or walls.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.07.01**
ELEMENT:	**Light Intensity**
FACTOR:	Lighting
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.38.

"Every working surface in a processing room in an establishment shall be provided with an illumination having a minimum intensity of twenty foot-candles."

Rationale: Lighting (natural or artificial) of adequate intensity must be provided in processing areas to enable activities to be hygienically performed. In processing and support areas, a minimum intensity of twenty foot-candles (220 lux) must be provided. In areas where inspection is taking place, an illumination of at least 75 foot candles (800 lux) is required. Non working areas such as maintenance, utility room and storage rooms can have a minimum intensity of ten-foot candles (110 lux). It is recommended that light approximate natural daylight.

*The standard for **light intensity** will be met when:*

(FA.02.07.01.01) Light intensity in processing areas and product storage and handling areas is at least 220 lux (20 foot-candles).

(FA.02.07.01.02) Light intensity in areas where inspection is conducted is at least 800 lux (75 foot candles).

(FA.02.07.01.03) Light intensity in maintenance, utility and storage rooms is at least 110 lux (10 foot-candles).

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.07.02**
ELEMENT:	**Light Fixture and Design**
FACTOR:	Lighting
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Code of Practice General Principles of Food Hygiene, Section 4.4.6, Lighting
Codex Alimentarius Food Hygiene Basic Texts, Section 4.4.7, Lighting

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.10.

"Fish that is intended for human consumption shall be adequately iced or chilled while being held or transported and shall be protected from contamination and the weather

Rationale: Light bulbs and ceilings fixtures may become sources for contamination due to falling debris, dust and in case of breakage and faulty maintenance in the area where fish, ingredients and packaging materials are exposed to the environment. Therefore it is critical that all lighting fixtures be protected with acceptable covers to prevent contamination of food upon breakage. Light bulb, tube lights and fixtures in all fish handling and processing environments and support areas such as transportation vehicle where there is exposed fish, ingredients, or packaging materials must be adequately covered or be coated with a shatterproof materials in case of breakage and also be maintained in good condition

*The standard for **light fixtures and design** will be met when:*

(FA.02.07.02.01) Light bulbs and fixtures are protected by acceptable covers or coated with shatterproof materials

(FA.02.07.02.02) Light fixtures are easy to clean and disinfect

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.08.01**
ELEMENT:	**Location**
FACTOR:	Toilet Facilities
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.29.

"Every establishment shall contain toilet facilities that are constructed and located in such a manner as to prevent the contamination of the establishment or the water supply of the establishment."

Rationale: It is essential that welfare and toilet facilities do not become a source of contamination. Toilet facilities should be conveniently located and easily accessible, but must not open directly into food handling areas.

The standard for location of lavatory will be met when:

(FA.02.08.01.01) Welfare and lavatory facilities are located separately from, and do not open directly into, any fish handling area or storage areas for fish, packaging material or containers.

(FA.02.08.01.02) Welfare and lavatory facilities are located so that employees do not have to traverse an incompatible area to gain access.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.08.02**
ELEMENT:	**Construction of Lavatories**
FACTOR:	Toilet Facilities
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.29, s.30.

s.29 "Every establishment shall contain toilet facilities that are constructed and located in such a manner as to prevent the contamination of the establishment or the water supply of the establishment."

s.30 "The room in which a toilet facility in an establishment is located shall,

(a) have self-closing doors;

(b) be ventilated to the outside;(c) have walls and a ceiling that are smooth, light in colour and that can be readily cleaned; and

(d) have a floor that is constructed of impervious material and that can be readily cleaned."

Rationale: Toilet facilities must not be allowed to become a source of contamination of the establishment and water supply. Toilet facilities should be well lit and must adequately vent to the outside to eliminate steam condensation, dust, objectionable odours, and the risk of airborne contamination. Toilet facilities shall have walls and ceilings that are smooth and light-coloured to promote sanitation and increase light levels within the establishment. Floors must be impervious to moisture, and floors, ceilings and walls should be easy to clean and sanitize. Doors into the toilet facility must be self-closing, and completely fill the doorway openings to ensure that the toilet facility is kept separate from other areas of the establishment. Toilet facilities must have adequate drainage and sewage disposal systems to eliminate overflows that could contaminate food handling areas.

*The standard for **lavatory construction** will be met when:*

(FA.02.08.02.01)	Lavatory facilities are well lit and mechanically vented to the outside.
(FA.02.08.02.02)	Walls, doors and ceilings in lavatory facilities are smooth, light-coloured and easy to clean.
(FA.02.08.02.03)	Lavatory floors are impervious and easy to clean. There are no vinyl tiles, sheet vinyl or similar floor coverings.
(FA.02.08.02.04)	Welfare and lavatory facilities have self-closing doors that completely fill doorway openings.
(FA.02.08.02.05)	Lavatory facilities have drainage and sewage disposal systems that are separate from operational drainage and waste water disposal systems.
(FA.02.08.02.06)	Coat hooks or similar facilities are provided outside the lavatory area, so that workers do not wear or carry food contact protective clothing into the lavatory area.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.08.03**
ELEMENT:	**Hand Washing Facilities**
FACTOR:	Toilet Facilities
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.29.

"Every establishment shall contain toilet facilities that are constructed and located in such a manner as to prevent the contamination of the establishment or the water supply of the establishment."

Rationale: Toilet facilities should have adequate means of hygienically washing and drying hands adjacent to toilets so that employees themselves do not become a source of contamination. It is recommended that hand washing facilities are located so that personnel must pass them when returning to food handling areas, and signs to remind employees to wash their hands should be posted. Taps should be non-hand operable because tap handles can become contaminated through repeated use by soiled hands. Toilet facilities must be equipped with soap and single-service towels and waste receptacles.

*The standard for **hand washing facilities in lavatories** will be met when:*

(FA.02.08.03.01) Hand washing facilities are provided within all lavatory facilities.

(FA.02.08.03.02) Lavatory hand washing facilities are equipped with hands-free, remote-operated faucets.

(FA.02.08.03.03) Lavatory hand washing facilities are supplied with approved liquid soap in wall mounted dispensers, single-use paper towels in suitable dispensers, and waste receptacles.

(FA.02.08.03.04) A notice is posted in lavatories instructing staff to wash their hands after using the facilities.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.08.04**
ELEMENT:	**Sufficient Numbers**
FACTOR:	Toilet Facilities
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Facilities Inspection Manual, (Fish Inspection Program), Canadian Food Inspection Agency (CFIA), Ch. 5, Subject 1. 5.1 Washrooms

"Flush toilets shall be:
(a) present in adequate numbers for both sexes;
(b) conveniently located adjacent to processing areas;
(c) designed so that areas do not lead directly into processing area; and
(d) equipped with floor drains that will prevent any overflow of water or sewage from entering or contaminating a processing area

Rationale: It is essential that an adequate number of toilets be available to meet the needs of employees. As a guideline, a minimum number of toilets must be provided for the following numbers of employees:

1 to 9 employees – 1 toilet
10 to 24 employees – 2 toilets
25 to 49 employees – 3 toilets
50 to 100 employees – 5 toilets
Every 30 employees over 100 – 1 toilet

The number of toilets for men can be reduced by one for each urinal installed, as long as it is not reduced below two-thirds of the appropriate number specified above.

Where the number of employees is small enough that a single washroom is adequate, separate facilities for men and women are not required.

Toilet facilities must be close enough to processing areas that they can be conveniently used by employees. Toilets cannot lead directly into food processing areas. Entrances to toilet rooms from the processing area are acceptable provided that the toilet rooms are equipped with an anteroom which separates them from the processing area. Toilet rooms must be equipped with drains or be otherwise designed to eliminate overflows of water or sewage so that there is no possibility of contaminating processing areas. Toilet rooms must be adequately vented to the outside.

*The standard for **sufficient numbers of toilet facilities** will be met when:*

(FA.02.08.04.01) The number of toilets provided meets the numbers of employee requirements.

(FA.02.08.04.02) Separate welfare and lavatory facilities are provided for employees working in clean and dirty areas.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.09.01**
ELEMENT:	**Location / Adequacy / Number**
FACTOR:	Hand-washing Facilities
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.31.

"Every establishment shall be provided with sanitary washbasins in locations that are visible from the working area, equipped with hot and cold running water, liquid or powdered soap and air dryers or single service towels."

Rationale: It is essential that the hands of plant employees and visitors do not become a source of contamination within the establishment. Sanitary washbasins must be conveniently located in or visible from all food handling areas and in locations where personnel must pass them when returning to food handling areas. There must be an adequate number of washbasins to accommodate the number of workers in the establishment and the activities performed. A guideline of one washbasin for every ten employees should be followed, but in any case, there must be sufficient facilities available to prevent bottlenecks and delays at the entrance to the processing area.

*The standard for **location of hand washing facilities** will be met when:*

(FA.02.09.01.01) Sanitary washbasins are conveniently located in or visible from all food handling areas and in locations where personnel must pass them when returning to food handling areas.

(FA.02.09.01.02) The number of washbasins available and accessible is adequate for the number of workers and the activities being performed.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.09.02**
ELEMENT:	**Water Temperature and Pressure**
FACTOR:	Hand-washing Facilities
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.31.

"Every establishment shall be provided with sanitary washbasins in locations that are visible from the working area, equipped with hot and cold running water, liquid or powdered soap and air dryers or single service towels."

Rationale: The temperature of water used in hand-washing is critical. All hand washing facilities must be equipped with hot and cold running water of potable quality. Washbasin must have combination faucets that enable the hot and cold water to be blended to a temperature that is sufficient to dissolve soils. A temperature within the range of 46°C (115°F) to 52°C (125°C) will be sufficient. If the water temperature is too high, people will not use them effectively, if at all.

The pressure of the water contributes to the efficiency of hand-washing. Water pressure must be adequate for the intended purpose.

*The standard for **hand washing equipment** will be met when:*

(FA.02.09.02.01) Washbasins are supplied with potable hot and cold running water and are equipped with a combination faucet to blend hot and cold water.

(FA.02.09.02.02) Water temperature at washbasins falls within the range of 46 to 52°C (115 to 125°F).

(FA.02.09.02.03) Water pressure at washbasins is adequate for effective hand washing and rinsing.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.09.03**
ELEMENT:	**Hand-free Access**
FACTOR:	Hand-washing Facilities
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.31.

"Every establishment shall be provided with sanitary washbasins in locations that are visible from the working area, equipped with hot and cold running water, liquid or powdered soap and air dryers or single service towels"

Rationale: Tap handles can be come a source of contamination if soiled hands repeatedly touch them. In order to maintain washbasins in a sanitary condition, it is essential that workers have the means to obtain water without using their hands. Washbasins must be provided with non-hand operable taps (remote controlled, timed). Timed hand wash devices must be maintained so that they do not shut off prematurely. Wing taps should not be considered as hands free devices. Toggles built in to the faucet do not work well.

*The standard for **hands-free access** will be met when:*

(FA.02.09.03.01) Washbasin taps are hands-free, remote-controlled or timed.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.09.04**
ELEMENT:	**Soap**
FACTOR:	Hand-washing Facilities
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.31.

"Every establishment shall be provided with sanitary washbasins in locations that are visible from the working area, equipped with hot and cold running water, liquid or powdered soap and air dryers or single service towels".

Rationale: The hands of plant employees and visitors have the potential to increase the microbial load of fish and fish products. A thorough washing with soap and water is needed to properly clean hands. Simply rinsing hands under water is not sufficient. It is essential that washbasins are equipped with an appropriate bactericidal soap in liquid or powdered form that is easily within reach. Washing of hands with ordinary soaps (anionic detergents) and water will remove only most of the transient organisms. In some cases, cationic detergents, which possess germicidal properties, may be required for removal of resident flora.

Bar soap can be a source of cross-contamination between users, and powdered soap may be difficult to rinse off, thus creating the potential for chemical contamination of fish products or packaging.

Approved liquid soap must be supplied in suitable wall mounted dispensers that are easily accessed and operated by the user. A guide for acceptable hand washing soap is the available under CFIA reference list of Accepted Construction Materials, Packaging Materials and Non- Food Chemicals Product

*The standard for **hand washing soap** will be met when:*

(FA.02.09.04.01) Washbasins are supplied with approved liquid soap in wall mounted dispensers that are easily accessed and operated by the user.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.09.05**
ELEMENT:	**Hand Drying Facilities**
FACTOR:	Hand–washing Facilities
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.31.

"Every establishment shall be provided with sanitary washbasins in locations that are visible from the working area, equipped with hot and cold running water, liquid or powdered soap and air dryers or single service towels".

Rationale: It is essential that a suitable means of hygienically drying hands be provided adjacent to each hand-washing facility. Where paper towels are used, they must be of a single use nature, and a sufficient number of dispensers and receptacles must be provided.

There is a high possibility of re-contaminating and cross-contaminating cleaned hands through the use of roller towels; therefore their use in food handling areas should be prohibited.

Air dryers are not an acceptable means of drying hands in production areas because they create air currents and movement which may contaminate product. If air dryers are used, they should only be in welfare areas.

*The standard for **hand drying facilities** will be met when:*

(FA.02.09.05.01) Single use paper towels in suitable dispensers are supplied at each hand washing station.

(FA.02.09.05.02) Waste receptacles for paper waste are provided adjacent to washbasins.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.09.06**
ELEMENT:	**Condition/Other Uses**
FACTOR:	Hand-washing Facilities
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.31.

"Every establishment shall be provided with sanitary washbasins in locations that are visible from the working area, equipped with hot and cold running water, liquid or powdered soap and air dryers or single service towels".

Rationale: If hand-washing facilities are not maintained in a sanitary condition, they may become a source of contamination. In order to maintain washbasins in a sanitary condition, they must be cleaned and disinfected regularly. Unsanitary practices such as storage of hand tools or unsuitable materials in or near hand-washing sinks is not permitted.

*The standard for **hand washing facilities - conditions/other uses** will be met when:*

(FA.02.09.06.01) No equipment is stored in washbasins.

(FA.02.09.06.02) Washbasins are used only for hand washing.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.10.01**
ELEMENT:	**Boot Washing Facilities**
FACTOR:	Sanitary Clothing
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.74 (1) and (2).

(1) "Except for a filleter, skinner, scaler, handler of round or dressed fish or a worker in a frozen storage room in a fresh-fish, freezing or semi-preserving establishment, every employee engaged in a fish processing operation in a cannery or a fresh-fish, freezing or semi-preserving establishment shall wear a clean coverall, smock or coat and headgear that completely covers the hair.

(2) "All protective outer garments worn by an employee in a fish processing operation in a cannery shall be kept thoroughly cleaned."

Rationale: Boots worn in a plant can be a major source of cross contamination of the processing environment. It is necessary to position boot washing facilities at all entrances to a processing area from less sanitary areas such as offal rooms, outside storage and welfare areas.

If not maintained properly, boot washes may become a source of contamination of the processing environment. Solutions must be changed regularly, with a frequency dependent on the accumulation of dirt and organic material. If a hot water hose is used as a substitute for a boot wash tub or basin, the hose must be located and used so that the possibility for overspray and cross contamination is prevented.

*The standard for **boot washing facilities** will be met when:*

(FA.02.10.01.01) Boot dips or boot washing facilities are provided at entrances to processing rooms.

(FA.02.10.01.02) Boot washing facilities contain an approved sanitizer, and are maintained in operating condition during processing operations.

(FA.02.10.01.03) Boot washing hoses are supplied with hot water, and are located and used so that they do not contaminate the processing environment.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.11.01**
ELEMENT:	**Construction (Equipment)**
FACTOR:	Equipment
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.33, s.34, s.42, s.43, s.47, s.48.

s.33 "The frames and legs on all equipment on which fish is processed shall be constructed of metal or other durable and impervious material, other than wood, that can be readily cleaned."

s.34 "A table in an establishment shall be so constructed that it and the area beneath it can be readily cleaned."

s.42 "Every cutting, filleting and skinning board in a cannery and a fresh-fish, freezing or semi-preserving establishment shall be made of planed lumber or other material that is smooth and without cracks."

s.43 "Every surface in a cannery and a fresh-fish, freezing or semi-preserving establishment, other than a cutting, filleting and skinning board on which fish is processed, shall be made of a non-corrodible material, other than wood, and every joint on the surface shall be smooth and watertight."

s.47 "No person shall use a wire mesh utensil in processing fish in a cannery or a fresh-fish, freezing or semi-preserving establishment."

s.48 "No person shall use an enameled utensil in processing fish in a cannery or a fresh-fish, freezing or semi-preserving establishment."

Rationale: It is essential that equipment does not become a source of contamination of food products. Equipment must be constructed of material that is smooth, durable and impervious and can be readily and repeatedly cleaned and disinfected. Direct and indirect product contact surfaces are equally important, allowing complete cleaning and sanitizing of the processing environment, to eliminate harbourage of organisms that contribute to production of unsafe and/or spoiled food.

Only CFIA approved materials may be used in construction of equipment.

Tables, chutes, conveyors, flumes and other equipment must be constructed to be free of seams and crevices that trap debris and permit bacterial growth. Welds must be continuous, seamless and free of pits. Table legs and frames should not have holes in them, or have attachments that are bolted or riveted together, such that there are crevices and gaps that will trap dirt and organic debris.

Equipment must movable so that the area underneath and surrounding it can be easily accessed for cleaning. If appropriate, it must be readily disassembled for cleaning and sanitizing.

*The standard for **equipment construction** will be met when:*

(FA.02.11.01.01)	Fish processing equipment, including the frames and legs, is constructed of approved, non-wood materials that are durable, smooth, impervious, non-corrodible, non-absorbent, non-toxic, and easy to clean and disinfect.
(FA.02.11.01.02)	Location and installation of equipment allow for ease of cleaning the surrounding area.
(FA.02.11.01.03)	Joints on cutting and operating surfaces are smooth and watertight.
(FA.02.11.01.04)	Welded joints on equipment are smooth and continuous.
(FA.02.11.01.05)	There are no wire mesh utensils in use.
(FA.02.11.01.06)	There are no enameled utensils in use.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.11.02**
ELEMENT:	**Construction (Conveyors)**
FACTOR:	Equipment
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.36, s.37, s.46.

s.36 "No wood shall be used in the construction of a conveyor in an establishment where the wood will come into contact with fish."

s.37 "Flumes for conveying fish shall be constructed of non-corrodible material, other than wood, that can be thoroughly cleaned."

s.46 "Every conveyor belt in a cannery and a fresh-fish, freezing or semi-preserving establishment that comes in contact with fish, other than canned fish or packaged fish, shall be fitted with a spray washer and, where practical, a scraper."

Rationale: It is essential that food be protected during transport. Materials used for the construction of conveyors and flumes must be smooth, non-corrodible, non-absorbent and easy to maintain, clean and sanitize. Conveyors and flumes must not be constructed of wood.

*The standard for **construction of conveyors** will be met when:*

(FA.02.11.02.01) Conveyors and flumes are constructed of approved, smooth, corrosion-resistant, non-absorbent, non-wood material.

(FA.02.11.02.02) Conveyors are easy to maintain, clean and sanitize. They are readily moved or disassembled as required to allow cleaning of equipment and the surrounding area.

(FA.02.11.02.03) Conveyor belts that contact fish that is not protected with a package or can, are equipped with a spray washer and a scraper where appropriate.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.11.03**
ELEMENT:	**Containers**
FACTOR:	Equipment
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.44, s.45.

s.44 "Every receptacle, tray, tank, vat and utensil used for processing fish in a cannery and a fresh-fish, freezing or semi-preserving establishment shall be made of a non-corrodible material, other than wood, and shall have smooth surfaces free from cracks and crevices."

s.45 "Every box, cart, bin and other receptacle used in a cannery and a fresh-fish, freezing or semi-preserving establishment for holding fish, other than live fish, before it is further processed or shipped, shall be constructed so as to provide drainage and, where made of wood, be constructed of planed lumber or waterproof plywood and be coated with a durable and waterproof material free of contaminants."

Rationale: It is essential that equipment does not become a source of contamination of food products. Containers, including all boxes, receptacles, bins, tanks and trays used for fish processing must be of material that is smooth, durable and impervious and can be readily and repeatedly cleaned and disinfected. Receptacles used to hold fish, other than live fish, have provisions for drainage to prevent holding of waste water. Cardboard or wood boxes can harbour micro-organisms and deteriorates rapidly in moist conditions, so it is not an acceptable material for use.

*The standard for **containers** will be met when:*

(FA.02.11.03.01) All boxes, receptacles, bins, tanks and trays used for fish processing are made of approved material and are smooth and free of cracks and crevices.

(FA.02.11.03.02) Receptacles used to hold fish, other than live fish, have provisions for drainage.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.12.01**
ELEMENT:	**Product Flow**
FACTOR:	Plant Layout
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Recommended International Codes of Practice for Fresh Fish, Smoked Fish, Frozen Fish, and Salted Fish, Codex Alimentarius – Plant Construction and Sanitary Design, 5.1.2, 5.1.1, 4.1.1

A great deal of care should be taken in planning the layout and equipment of a fish processing plant to ensure that there is sufficient space and suitable facilities to carry out each operation efficiently with due concern for hygiene and quality of the final product and to move fish and materials through the various stages in an orderly manner. In order to prevent cross-contamination between different processing activities and safeguard the wholesomeness and quality of fish and fish products, the following operations should be conducted in separate rooms or in well defined areas of adequate size.

- Processing (dressing, brining, smoking);
- Cooling, packaging; and
- Storage of final products.

The fish handling and storage areas should be entirely divorced from:
- Storage of waste materials;
- Storage of packaging materials;
- Storage of cleaning and disinfecting compounds; and
- Storage of wood and wood products used in the smoking process.

Rationale: It is essential that the plant be designed so that edible fish products flow in one direction, from receiving to processing, packing and shipping, while inedible parts and byproducts flow away from edible products. There must be enough rooms to allow for sanitary processing of raw, smoked, salted and canned fish, and for appropriate storage of the finished product.

Where part of the plant may be used as living quarters, there must be no communication between the living quarters and any other part of the plant.

*The standard for **plant layout** will be met when:*

(FA.02.12.01.01)	The plant layout and product flow is such that offal, contaminated, and diseased fish products are directed away from edible products.
(FA.02.12.01.02)	Product flow is such that ready to eat products are not backtracked into areas where raw fish are handled or stored.
(FA.02.12.01.03)	Product flow is such that ready to eat products do not cross-over the path of raw fish or any other source of contamination.
(FA.02.12.01.04)	Separate rooms and facilities are provided for handling, processing and storing edible fish and fish products.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.02.12.02**
ELEMENT:	**Storage of Hazardous Goods, Janitorial and Maintenance Supplies**
FACTOR:	Plant Layout
AREA:	Plant Design and Construction
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.64.

"No unnecessary material or equipment shall be stored in a working area of an establishment."

Rationale: Chemicals and equipment used for sanitation, pest control and maintenance may pose a threat to food safety if stored in a processing room. Separate enclosed storage is necessary to prevent accidental spillage during operations, or inadvertent damage or contamination due to misuse. The storage room must be kept in good condition and be located so that fumes or air from the storage area will not affect the processing environment.

*The standard for **storage of hazardous chemicals, janitorial and maintenance supplies** will be met when:*

(FA.02.12.02.01) There are separate rooms for the storage of cleaning and janitorial supplies and equipment, maintenance supplies and equipment, and incompatible or hazardous chemicals.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.03.01.01**
ELEMENT:	**Handling only Wholesome Fish**
FACTOR:	Product Handling and Condition
AREA:	Product Integrity
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): R.S.O. 1990, c. F.18, s.7 (1).

"No person shall sell, offer for sale, or hold in possession for sale, any fish intended for human consumption that is tainted, decomposed or unwholesome."

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.2.

"For the purposes of section 7 of the Act,
"decomposed", with respect to fish, means fish that has an offensive or objectionable odour, flavour, colour or textural defect associated with spoilage;
"tainted", with respect to fish, means fish that is rancid or has an abnormal odour or flavour;
"unwholesome", with respect to fish, means fish that has in or upon it micro-organisms of public health significance or substances toxic or aesthetically offensive to man."

Rationale: Production of safe fish products demands fish and fish products that are clean, wholesome, and in a condition fit for human consumption. Any degree of decomposition of fish products, any rancidity, abnormal or off flavour, and any presence of harmful microorganisms, chemicals or substances in fish and fish products will represent a serious risk to the consumer of that product. No amount of cooking or processing can restore the wholesomeness of food products that have been allowed to decompose, become tainted or unwholesome. While some potential disease causing organisms may be present in the environment, it is the processor's obligation to take all precautions available to ensure that harmful organisms or contaminating chemicals do not enter the food chain via fish products.

Any fish product that falls on the floor or contacts a contaminated surface is trimmed only if it will not jeopardize the wholesomeness of the fish product.

*The standard for **handling only wholesome fish** will be met when:*

(FA.03.01.01.01)	The operator ensures that only wholesome fish products that are not tainted or decomposed are used in fish processing.
(FA.03.01.01.02)	Employees are trained to segregate and remove unacceptable fish prior to processing
(FA.03.01.01.03)	Employees are trained to segregate and remove unacceptable fish during processing.
(FA.03.01.01.04)	Employees handle unacceptable fish in a sanitary manner, and wash and sanitize hands and other food contact surfaces if contaminated with unwholesome, tainted or decomposed fish.
(FA.03.01.01.05)	Fish that falls on the floor is removed and disposed of as inedible.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.03.01.02**
ELEMENT:	**Handling of Decomposed, Tainted or Unwholesome fish**
FACTOR:	Product Handling and Condition
AREA:	Product Integrity
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): R.S.O. 1990, c. F.18, s.7 (1).

"No person shall sell, offer for sale, or hold in possession for sale, any fish intended for human consumption that is tainted, decomposed or unwholesome."

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.2.

"For the purposes of section 7 of the Act,
"decomposed", with respect to fish, means fish that has an offensive or objectionable odour, flavour, colour or textural defect associated with spoilage;
"tainted", with respect to fish, means fish that is rancid or has an abnormal odour or flavour;
"unwholesome", with respect to fish, means fish that has in or upon it micro-organisms of public health significance or substances toxic or aesthetically offensive to man."

Rationale: Production of safe fish products demands fish and fish products that are clean, wholesome, and in a condition fit for human consumption. Any degree of decomposition of fish products, any rancidity, abnormal or off flavour, and any presence of harmful microorganisms, chemicals or substances in fish and fish products will represent a serious risk to the consumer of that product. No amount of cooking or processing can restore the wholesomeness of food products that have been allowed to decompose, become tainted or unwholesome. While some potential disease causing organisms may be present in the environment, it is the processor's obligation to take all precautions available to ensure that harmful organisms or contaminating chemicals do not enter the food chain via fish products

Where fish products may have decomposed or tainted, there must be equipment and procedures in place to identify, separate, and remove all unacceptable product from the processing environment immediately. Measures must be taken to ensure that there is no cross-contamination with wholesome product, and there are facilities available to provide and maintain segregation until eventual disposal.

To this end, clearly distinguishable coded or marked containers for edible fish and inedible products are essential, as is a separate room for storage of inedible fish products until they are removed from the plant. Integral to this process is fully trained employees who recognize unacceptable product, and know why and how it is to be controlled, segregated and removed from the plant.

Provided that there is no additional risk from cross-contamination, the room used for storing offal and offal containers may also be used for storage of inedible fish.

Inedible fish containers cannot be stored in product coolers, or other edible product storage rooms.

The standard for handling ***and segregation of inedible, decomposed, tainted, or unwholesome fish*** *will be met when:*

(FA.03.01.02.01)	There are clearly marked or coded containers of acceptable construction used for containing and disposing of inedible, decomposed, tainted or unwholesome fish or fish products.
(FA.03.01.02.02)	Inedible fish containers are not in contact with edible fish, containers or processing equipment.
(FA.03.01.02.03)	Inedible fish containers are cleaned and sanitized before being brought into the processing area.
(FA.03.01.02.04)	Personnel who handle inedible fish containers do not handle edible fish, containers or processing equipment, or they do so only after washing hands and ensuring that their protective clothing is cleaned and sanitized.
(FA.03.01.02.05)	Inedible fish containers are removed from the processing area promptly.
(FA.03.01.02.06)	There is a separate room or area for the storage of inedible products. Inedible products are not shipped via the same shipping facility as edible products.
(FA.03.01.02.07)	There are facilities for cleaning and sanitizing inedible containers in a manner that will not contaminate the processing environment.
(FA.03.01.02.08)	Inedible fish containers are not stored in edible product storage areas.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.03.01.03**
ELEMENT:	**Dressing and Filleting**
FACTOR:	Product Handling and Condition
AREA:	Product Integrity
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.71.

"(1) All fish which are to be canned shall be thoroughly washed prior to canning.

(2) Round fish shall be thoroughly washed prior to processing

(3) Where fish has been dressed, it shall be thoroughly washed prior to further processing."

Rationale: There is no substitute for clean product, and no further processing step can reverse the negative impact on quality that is created by product that is not clean. Food safety is compromised by any contamination that occurs, whether on round fish that are not clean prior to processing, or on fish that is undergoing the eviscerating and filleting process. Manual and automated eviscerating and filleting operations must be run with the goal of preventing fecal contamination of fish meat.

Automated equipment must have continuous rinses on belts and cutting equipment to remove inedible portions and contamination. There must be frequent human 'back-up' of automated equipment to ensure that equipment has removed viscera cleanly without contamination of fish meat, and that internal organs do not remain attached to eviscerated fish or fillets.

Manual operations require trained staff who have clean equipment, personal protective gear, and convenient access to rinsing and washing facilities. Gloves that are in contact with edible fish must be made of approved material, and easy to clean and sanitize.

*The standard for **dressing and filleting fish** will be met when:*

(FA.03.01.03.01)	All fish to be canned are thoroughly washed prior to canning. Fish going into cans are clean.
(FA.03.01.03.02)	Prior to any processing, round fish are washed with running potable water.
(FA.03.01.03.03)	Prior to any further processing, all dressed fish are washed with running potable water.
(FA.03.01.03.04)	Automated cutting blades and all fish contact surface of dressing, eviscerating and filleting machines are continuously rinsed with potable water, and are maintained visibly clean.

(FA.03.01.03.05) Fish processing equipment is monitored regularly to ensure that contamination is not caused by the equipment, and that it is routinely adjusted as required.

(FA.03.01.03.06) Fish exiting automated eviscerating and/or filleting machinery are checked continually and any internal organs that may remain attached are trimmed off, and any contaminated fish meat is appropriately trimmed or removed as inedible product.

(FA.03.01.03.07) Manually eviscerated and filleted fish are handled cleanly and workers have access to hand and equipment rinses. Contaminated fish meat is removed as inedible product, or trimmed appropriately.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.04.01.01**
ELEMENT:	**Documentation**
FACTOR:	Written Program
AREA:	Sanitation
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.3 (1)(b), s.9, s.68, s.75, s.76, s.77.

s.3 "An inspector may at any time,
(b) require to be produced for inspection or for the purpose of obtaining copies thereof, or extracts there from, any books, shipping bills, bills of lading or other documents or papers relating to the processing, transporting or marketing of fish"

Rationale: For consistent plant sanitation, it is essential that the sanitation program carried out by a plant be documented in the form of a written sanitation program, which outlines housekeeping and janitorial specifications, cleaning and sanitizing specifications, including schedules and procedures, cleaning products and their concentration, and cleaning equipment. Equipment manuals are available to ensure proper disassembly and re-assembly of processing equipment.

Responsibilities of supervisors, cleaning person, and outside contracted services if applicable must be defined, including mechanisms for verifying that every room and all equipment are effectively cleaned and sanitized.

Documentation of these procedures ensures that the procedures can be carried out in a consistent manner regardless of changes in personnel and supervisory staff.

It is important that the sanitation program is available to all staff, and that it is amended whenever plant, equipment, chemical or other changes are made.

*The standard for **written sanitation program** will be met when:*

(FA.04.01.01.01) The operator has a written sanitation program which outlines cleaning and sanitizing specifications and procedures for all rooms and all equipment, including transport vehicles and containers used in transport vehicles.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.04.01.02**
ELEMENT:	**Written Sanitation Record**
FACTOR:	Written Program
AREA:	Sanitation
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.68.

"Every establishment and all equipment and utensils used in the operation of an establishment shall be kept in good repair and in a clean and sanitary condition."

Rationale: For consistent plant sanitation, it is essential that the sanitation program carried out by a plant be documented in the form of a written sanitation program, which outlines housekeeping and janitorial specifications, cleaning and sanitizing specifications, including schedules and procedures, cleaning products and their concentration, and cleaning equipment. Equipment manuals are available to ensure proper disassembly and re-assembly of processing equipment.

Responsibilities of supervisors, cleaning person, and outside contracted services if applicable must be defined, including mechanisms for verifying that every room and all equipment are effectively cleaned and sanitized.

It is also essential that cleaning activities be recorded when completed, and that the person responsible for the work, and the supervisor for the area be identified in the record, and that there be a post-cleaning or pre-operational check and verification that cleaning procedures were carried out as required.

*The standard for **written sanitation record** will be met when:*

(FA.04.01.02.01) There is a cleaning and sanitation document in which routine cleaning and sanitizing activities are recorded and dated.

(FA.04.01.02.02) The sanitation document includes provisions for identifying designated staff, and recording of observed deficiencies and corrective actions taken.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.04.02.01**
ELEMENT:	**Cleaning Chemicals**
FACTOR:	Plant Sanitation Techniques
AREA:	Sanitation
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.66.

"Every establishment shall be equipped with brushes, brooms, hoses and other equipment and material for the cleaning of the establishment."

Rationale: It is essential that cleaners, disinfectants, sanitizers and other chemicals used in a food plant be approved for food plant use. These chemicals have satisfied requirements of the Canadian Food Inspection Agency, with reference to Health Protection Branch, Health Canada, that their use will not directly or indirectly contaminate food products during application and storage. Furthermore, they have been shown to be effective for the stated purpose when used at the concentration indicated on the label and their chemical composition has been declared.

All chemicals in use must be listed in the sanitation program, with applicable Canadian Food Inspection Agency (CFIA) approval number or other documentation. MSDS sheets must also be maintained at the plant for products in use. Clear written dilution and usage instructions must be available to all users.

Agents used for cleaning and sanitizing the establishment must be conveniently available in quantities that are adequate to enable thorough cleaning. Cleaning chemicals must not be allowed to become a source of contamination for food products. Separate secure storage to prevent accidental contamination or misuse.

*The standard for the **use of approved chemicals** will be met when:*

(FA.04.02.01.01) A list of all chemicals used in the plant is included in the sanitation program.

(FA.04.02.01.02) Only Canadian Food Inspection Agency (CFIA) approved chemicals are used, and proof of CFIA approvals is included in the sanitation program.

(FA.04.02.01.03) Cleaning and sanitizing agents are readily available in adequate quantities.

(FA.04.02.01.04) Material safety data sheets are available for cleaning products in use.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.04.02.02**
ELEMENT:	**Cleaning Equipment**
FACTOR:	Plant Sanitation Techniques
AREA:	Sanitation
COMPONENT:	Fish Audit

Authoritative Source:

> *Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.66.*
> "Every establishment shall be equipped with brushes, brooms, hoses and other equipment and material for the cleaning of the establishment."

Rationale: The effectiveness of any cleaning procedure is a function of four factors: contact time (the length of time a cleaning compound is in contact with the soil); temperature (cleaning chemicals are more active at higher temperatures); mechanical action (which loosens soil); and detergent concentration.

In open plant cleaning, temperature plays a very minor role, as regardless of the initial temperature of the water, it cools on contact with surfaces. Water temperature, therefore, is insignificant in the cleaning process and therefore for economic reasons can be maintained at cool to lukewarm levels.

The equipment used in cleaning can alter the factors of contact time and mechanical action, and will thus have a significant impact on the detergent concentration that is required. The use of equipment that increases the contact time and/or the mechanical action will greatly improve the cleaning process. High-pressure pumps, for example, greatly increase mechanical action and are particularly useful for the pre-rinse. They have limited effectiveness for detergent application however.

The use of a compressed air foamer in combination with a foaming detergent greatly increases contact time, because the foam produced clings to surfaces, including vertical surfaces.

Metered equipment for flood sanitizing is possibly the most useful equipment in a plant, allowing accurate, effective and easy application of sanitizer.

Although such equipment aids the cleaning process, cleaning may be conducted through manual means. Such procedures may be less effective because of the length of time required to complete cleaning, and because it is difficult to reach high areas, nooks, crannies and corners. In some instances, however, where equipment is heavily soiled, there may be no substitute for manual scrubbing.

Equipment is used for cleaning and sanitizing activities should be designed to be effective for the purpose and used in the intended manner. Manual cleaning aids such as wood-handled brooms and brushes, and steel wool pads are not permitted.

*The standard for **cleaning equipment** will be met when:*

(FA.04.02.02.01) Adequate, appropriate and effective cleaning equipment is available.

(FA.04.02.02.02) Cleaning equipment is conveniently located and accessible.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.04.02.03**
ELEMENT:	**Toilet Facilities**
FACTOR:	Plant Sanitation Techniques
AREA:	Sanitation
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.58.

"Every toilet facility in an establishment shall be maintained in a clean condition and contain a supply of toilet tissue at all times"

Rationale: It is essential that toilet facilities in an establishment be maintained in a clean, functional condition because these areas may become a source of contamination and cross-contamination. To prevent toilet areas from becoming a source of contamination, regular cleaning and sanitizing is critical, and regular maintenance is essential to ensure that the facilities are in functional order. Lavatories must be supplied with essential supplies such as hand washing soap, paper towels and a suitable waste paper container, toilet paper. Lavatories must be included as part of the plant sanitation program.

Cross contamination can be prevented by ensuring that employees who handle raw fish, offal and other potentially contaminated materials and surfaces do not share welfare facilities (lavatories, change rooms and lunch rooms) with employees who handle and process higher risk foods such as smoked and fully cooked products.

*The standard for **toilet facilities** will be met when:*

(FA.04.02.03.01) Lavatory and welfare facilities are cleaned according to the sanitation program and schedule, and are maintained in a clean, sanitary, functional condition during operations.

(FA.04.02.03.02) Lavatory and welfare facilities are included in the written sanitation procedures, schedule and log.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.04.03.01**
ELEMENT:	**Adequacy of Cleaning Procedures**
FACTOR:	Procedures
AREA:	Sanitation
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.68.

s.68 "Every establishment and all equipment and utensils used in the operation of an establishment shall be kept in good repair and in a clean and sanitary condition."

Rationale: A successful cleaning procedure follows specific steps. A stepwise approach is essential to save time and money, to avoid re-soiling of already cleaned surfaces, and to avoid damage to equipment and the processing environment.

The first step is area preparation, involving removal of product, garbage, packaging or other materials that cannot get wet, dismantling of equipment to be cleaned and protection of non-water resistant motors, electrical boxes and other water-sensitive equipment. The second step involves scrapping, in which debris on table surfaces and floors is removed by dry procedures such as use of a broom, squeegee or shovel. The next step involves rinsing with water at no more than 125°F (52°C); this temperature allows melting of fats and grease, but is not hot enough to coagulate proteins. Use of water under pressure greatly aids this process, but is not essential. After rinsing, the cleaning compound is applied. Methods which increase the contact time of the detergent with the soiled surface, such as foaming, are most successful. For open plant cleaning, temperature of the water is not a factor, therefore cold or lukewarm water is acceptable.

Cleaning chemical selection depends on the soils encountered, and the 'hardness' if the water. It is advisable to work with a reputable cleaning chemical supplier to obtain the most effective chemicals for the job, taking into account the presence of fat, protein, offal, blood and other soils. Concentrations of cleaners should be according to manufacturer's recommendations. Many firms use a system of cleaning chemicals that are intended to work together to achieve the best results. When sufficient contact time has been allowed for the cleaning agent to work (in the range of 15 to 30 minutes), the cleaning agent and suspended soil should be thoroughly rinsed. Rinsing should proceed from one corner of the room or area to the exit, including walls, equipment and floors. Once rinsing has been thoroughly completed, the area should be inspected prior to sanitizing. It is essential that portable water be used throughout the process.

*The standard for **adequacy of cleaning procedures** will be met when:*

(FA.04.03.01.01) Cleaning and sanitizing procedures are carried out as outlined in the sanitation program, according to the cleaning schedule. Rooms and equipment in the plant, and transport vehicles and containers used in transport, are visibly clean when procedures are completed.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.04.03.02**
ELEMENT:	**Adequacy of Sanitizing Practices**
FACTOR:	Procedures
AREA:	Sanitation
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.68.

"Every establishment and all equipment and utensils used in the operation of an establishment shall be kept in good repair and in a clean and sanitary condition"

Rationale: Cleaning procedures are designed to remove all organic matter and a significant number of bacteria. Any bacteria surviving the cleaning process, however, are subjected to the moist conditions that favour growth. Flood application of a sanitizing compound at no-rinse approval levels is essential to complete the process. Sanitizers that may be used at no-rinse approval levels include quaternary ammonium compounds ("quats") at 200 ppm, iodophors (iodine compounds) at 25 ppm, and chlorine at 200 ppm. All sanitizers should be diluted with cold water rather than hot. This is particularly true for chlorine, which will vaporize at temperatures above 27°C (80°F). Flood application of sanitizer is best accomplished by metered equipment which automatically meters the correct level of sanitizer into the cold water source. The sanitizer should be flooded onto surfaces and allowed to remain without rinsing for continuing action. Sanitizers can be applied at times other than immediately after cleaning. An example is a room which is used only once per week. An effective cleaning and sanitizing program in this instance would involve cleaning and sanitizing immediately after use, as well as a flood sanitizing immediately prior to the next use to destroy any bacteria deposited on surfaces through dust, air movement, etc. Another appropriate application would be following a mid-shift rinse.

*The standard for the **adequacy of sanitizing practices** will be met when:*

(FA.04.03.02.01) An approved residual sanitizer is applied after every cleaning, and again prior to start-up of operations if the room has not been used for an extended period.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.04.04.01**
ELEMENT:	**Condition**
FACTOR:	Housekeeping/Janitorial
AREA:	Sanitation
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.64, s.68.

s.64 "No unnecessary material or equipment shall be stored in a working area of an establishment."

s.68 "Every establishment and all equipment and utensils used in the operation of an establishment shall be kept in good repair and in a clean and sanitary condition."

Rationale: Housekeeping and janitorial practices are important components of a sanitation program. These practices include regular removal of garbage, scraps and inedible materials, storage and handling practices for garbage, maintenance of washrooms and hand washing facilities and other housekeeping and janitorial activities, which may include maintenance of the grounds surrounding the plant.

Poor practices not only affect the overall hygiene of the plant, but may interfere with cleaning and sanitizing activities and employee hygiene.

The presence of inappropriate objects in processing or food handling areas or other areas of a plant may disrupt effectiveness of cleaning and sanitizing activities, employee hygiene and/or present a hazard with respect to contamination of food products.

Many products used in food processing facilities are highly toxic or hazardous to humans. Inadvertent contamination of food is particularly hazardous. Such products include industrial strength cleaners and sanitizers, pest control products, and any other products that may be hazardous to food. Compounds such as these should be stored under appropriate conditions in a location separate from the storage of any food or food ingredients. These materials should be stored in their original containers, labeled with their original labels, unless WHMIS guidelines are followed in re-labeling. Material Safety Data Sheets should always be maintained on these products. Under no circumstances should such products be stored or used in a manner that allows any potential contamination of fish or fish products or food contact surfaces.

*The standard for **housekeeping, storage and handling of hazardous chemicals** will be met when:*

(FA.04.04.01.01)	Housekeeping is orderly in all areas.
(FA.04.04.01.02)	No materials or objects are stored in inappropriate areas.
(FA.04.04.01.03)	Hazardous products are stored in their original containers, or are re-labeled in accordance with WHMIS Regulations.
(FA.04.04.01.04)	Hazardous products are used according to manufacturers' instructions.
(FA.04.04.01.05)	Use of hazardous products does not pose a risk to fish or any food handling surface.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.04.05.01**
ELEMENT:	**Specifications/Policies**
FACTOR:	Contracted Services
AREA:	Sanitation
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.68.

s.68 "Every establishment and all equipment and utensils used in the operation of an establishment shall be kept in good repair and in a clean and sanitary condition."

Rationale: When cleaning and sanitizing services are contracted to an outside agency, the responsibility for plant sanitation still remains with the plant operator. To ensure that a contracted agency performs the cleaning and sanitizing operations to comply with legislated requirements, it is essential for the plant to specify the conditions under which the cleaning and sanitizing operations are conducted.

The plant operator should clearly specify the cleaning and sanitizing procedures to be followed specify the frequency of cleaning and sanitizing operations for each area and piece of equipment, specify the cleaning equipment to be used, and the cleaning products and their concentration of use and appropriate applications. In addition, it is necessary to ensure that the contractor's workforce is properly trained and capable of doing the job.

*The standard for **contractor specification/policies** will be met when:*

(FA.04.05.01.01) Where cleaning and sanitizing services are contracted to an outside company, the plant's written sanitation program includes a written contract with the contracting company, which specifies that legislated requirements will be met.

(FA.04.05.01.02) The contract refers to the plant's written cleaning and sanitizing procedures, schedules, equipment and chemicals, and designates trained staff employed by the contractor to perform the work.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.04.05.02**
ELEMENT:	**Monitoring**
FACTOR:	Contract Services
AREA:	Sanitation
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.68.

"Every establishment and all equipment and utensils used in the operation of an establishment shall be kept in good repair and in a clean and sanitary condition."

Rationale: If cleaning/sanitizing services are contracted to an outside company, the performance must be monitored to ensure that specifications are complied with in terms of procedures carried out, their frequency, use of approved products and recommended equipment and that these procedures are properly documented.

*The standard for **contractor monitoring** will be met when*:

(FA.04.05.02.01) If cleaning/sanitizing services are contracted, there exists a written protocol that specifies monitoring procedures, reporting protocols, designated employees and supervisors, and required corrective actions.

(FA.04.05.02.02) If cleaning/sanitizing services are contracted, the operator maintains a record of monitoring procedures which includes observed deficiencies, corrective actions, and designated employees.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.05.01.01**
ELEMENT:	**Written Programs**
FACTOR:	Maintenance of Building and Equipment
AREA:	Maintenance of Plant and Equipment
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.68.

"Every establishment and all equipment and utensils used in the operation of an establishment shall be kept in good repair and in a clean and sanitary condition."

Rationale: Equipment for processing or storing fish and fish products must be designed to facilitate cleaning and sanitizing and prevent contamination of product through leakage of lubricants, metal filings or other contaminants. Corrosion- prone material and wood contain minute grooves, crevices and pockets which entrap bacteria, and do not lend themselves to thorough and repeated cleaning and sanitizing processes. Equipment should also be designed to avoid areas where soil and organic matter become trapped and inaccessible to cleaning. Damaged and cracked surfaces will also provide places where organic material may become trapped. Rough and non-continuous welds are also a significant problem for the same reason.

Suitable construction and design must be coupled with an organized plan to ensure that regular preventive maintenance procedures are outlined, scheduled and completed. Written procedures for routine repairs and adjustments, manufacturers' manuals for proper disassembly, repair and reassembly, safety concerns (electrical lockouts and others), and acceptable lubricants are all essential to ensure successful maintenance.

Procedures for emergency repairs during operations must be specified to ensure the continued acceptability of fish products that may be affected by the breakdown or the repair activities.

During processing activities, the opportunity for cross-contamination is a major food safety concern. The ultimate bacterial load originates from the fish, the processing equipment, food handlers and the environment. Failure to locate equipment in a manner that allows accessibility for cleaning and sanitizing operations, maintenance and servicing can compound the problem. Thus it is essential that equipment be located a sufficient distance from walls and ceilings to permit access to the areas around the equipment, or alternatively, be completely sealed to walls and ceilings.

Attention should also be paid to the location of equipment in areas where direct contamination by another process is likely to take place.

*The standard for **written maintenance program** will be met when:*

(FA.05.01.01.01) There is a written preventive maintenance program for all equipment and all plant facilities, including transport vehicles where applicable.

(FA.05.01.01.02) There is a complete schedule for the periodic maintenance of facilities and equipment.

(FA.05.01.01.03) There is an appropriate form for recording periodic and unscheduled maintenance on the facilities and equipment.

(FA.05.01.01.04) The record of periodic maintenance indicates that the maintenance schedule is followed and maintenance is carried out as required.

(FA.05.01.01.05) The maintenance program lists all chemicals used for maintenance purposes.

(FA.05.01.01.06) The maintenance chemical list includes CFIA approval for chemicals that are used on food processing equipment, and manufacturer instructions on appropriate use.

(FA.05.01.01.07) The maintenance program includes procedures to be followed to protect the integrity of food products during emergencies, breakdown or equipment failure.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.05.01.02**
ELEMENT:	**Condition of Equipment and Facilities**
FACTOR:	Maintenance of Building and Equipment
AREA:	Maintenance of Plant and Equipment
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.68.

"Every establishment and all equipment and utensils used in the operation of an establishment shall be kept in good repair and in a clean and sanitary condition."

Rationale: Equipment for processing or storing fish and fish products must be designed to facilitate cleaning and sanitizing and prevent contamination of product through leakage of lubricants, metal filings or other contaminants. Corrosion- prone material and wood contain minute grooves, crevices and pockets which entrap bacteria, and do not lend themselves to thorough and repeated cleaning and sanitizing processes. Equipment should also be designed to avoid areas where soil and organic matter become trapped and inaccessible to cleaning. Damaged and cracked surfaces will also provide places where organic material may become trapped. Rough and non-continuous welds are also a significant problem for the same reason.

During processing activities, the opportunity for cross-contamination is a major food safety concern. The ultimate bacterial load originates from the fish, the processing equipment, food handlers and the environment. Failure to locate equipment in a manner that allows accessibility for cleaning and sanitizing operations, maintenance and servicing can compound the problem. Thus it is essential that equipment be located a sufficient distance from walls and ceilings to permit access to the areas around the equipment, or alternatively, be completely sealed to walls and ceilings.

Attention should also be paid to the location of equipment in areas where direct contamination by another process is likely to take place. Where emergency repairs to building or equipment are necessary, repair personnel must take all measures required to protect the integrity of fish products. This may include removing product from the area, covering product if it cannot be moved, or destroying product which becomes contaminated or damaged due to the breakdown or ensuing repair. Areas that are undergoing construction or renovation may or may not be suitable for processing operations. At a bare minimum, any non-approved or incomplete structure must be fully covered with impervious material before operations commence. Each situation must be assessed on its own merits, but product integrity is paramount.

*The standard for **condition of equipment and facilities** will be met when:*

(FA.05.01.02.01) Building and fish processing and handling equipment are in acceptable operating condition.

(FA.05.01.02.02) Equipment is located so that it and the surrounding area can be cleaned completely, without adversely affecting any other process or equipment.

(FA.05.01.02.03) Equipment for each process is located so that there will not be contamination of other equipment or products during operations.

(FA.05.01.02.04) During operations, there were no repairs or alterations to building or equipment that jeopardized the integrity and safety of fish products.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.05.01.03**
ELEMENT:	**Thermometer Calibration**
FACTOR:	Maintenance of Building and Equipment
AREA:	Maintenance of Plant and Equipment
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.68.

"Every establishment and all equipment and utensils used in the operation of an establishment shall be kept in good repair and in a clean and sanitary condition."

Rationale: Integral to the preservation (chilling or freezing) of fish in a wholesome state, and processing fish to produce safe food products that may or may not be Ready to Eat (RTE), is the regular monitoring of room and product temperatures. Without regular calibration and maintenance, thermometer readings may become unreliable, hence putting product and consumer safety at risk.

It is therefore essential to have a written thermometer calibration program, specifying method and frequency, and recording each calibration procedure in a permanent record.

Frequency will vary depending on the location and purpose of each thermometer. Wall thermometers in processing rooms, coolers and freezers can be checked against a known accurate thermometer on a weekly or monthly basis, depending on production volumes. These thermometers need to be checked regularly for damage due to movement of product and machinery. Thermometers used to measure temperatures in smoking or canning operations must be accurate all the time and should be calibrated very frequently. It is essential to use a high quality mercury thermometer on canning retorts.

*The standard for **thermometer calibration** will be met when:*

(FA.05.02.01.01)	A written procedure for the periodic calibration of all thermometers has been developed, specifying responsible staff members and frequency.
(FA.05.02.01.02)	Calibration of thermometers is recorded in a suitable permanent log chart.
(FA.05.02.01.03)	There is a regular periodic check to ensure that all wall mounted thermometers are present and functioning.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.06.01.01**
ELEMENT:	**Quantity/Pressure**
FACTOR:	Water
AREA:	Water Quantity, Quality and Treatment
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.32 (1).

"Every establishment shall be provided with a supply of potable water that has a coliform bacteria count of not more than 2 per hundred milliliters and is under a minimum operating pressure of twenty pounds per square inch"

Rationale: An adequate potable water supply is considered an indispensable element for the operation of any food processing establishment. It is essential that the establishment be provided with a supply of water in quantities sufficient for all operations and clean-up purposes. The pressure of water used within an establishment is also very important because it can make a difference between the water being effective for its intended purpose, and not being effective. The water supply within an establishment must be under adequate pressure to serve the needs of the establishment. At a minimum, the operating pressure must be twenty pounds per square inch (approximately 140 kPa).

*The standard for **water quantity/pressure** will be met when:*

(FA.06.01.01.01) The water supply is consistently adequate for operational requirements.

(FA.06.01.01.02) Water pressure is consistently adequate for operational requirements

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.06.01.02**
ELEMENT:	**Quality**
FACTOR:	Water
AREA:	Water Quantity, Quality and Treatment
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.32.

(1) "Every establishment shall be provided with a supply of potable water that has a coliform bacteria count of not more than 2 per hundred milliliters and is under a minimum operating pressure of twenty pounds per square inch"

(2) "Despite subsection (1), an establishment may be provided with water other than water referred to in subsection (1) for fire protection, boilers or auxiliary services provided that there is no connection between the water system used for fire protection, boilers or auxiliary services and the system providing water for other purposes"

Rationale: It is essential that water used in food handling and processing areas does not become a potential source of contamination. Water must be of potable quality, having a coliform bacteria count of not more than 0 per hundred millilitres.

Water that is not of potable quality may be used for fire protection, boilers or auxiliary services provided that there is no connection between this water system and the potable water system, and all lines and pipes are clearly identified so that there is no confusion between the two water systems. If such systems are in place, suitable drawings of the water system should be available, so that the plumbing connections can be verified by the regulatory body.

*The standard for **water quality** will be met when:*

(FA.06.01.02.01) Water used in food handling and processing areas is potable, with test results as follows: Background Count ≤ 200 and/or HPC/APC ≤ 500 and Coliform Count = 0 and E. coli Count = 0.

(FA.06.01.02.02) Non-potable water used for fire protection, boilers or auxiliary services, flows in clearly identified lines and pipes separate from the potable water system, and there is no connection between the two systems

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.06.01.03**
ELEMENT:	**Source and Storage**
FACTOR	Water
AREA:	Water Quantity, Quality and Treatment
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.32 (1).

"Every establishment shall be provided with a supply of potable water that has a coliform bacteria count of not more than 2 per hundred millimeters and is under a minimum operating pressure of twenty pounds per square inch"

Rationale: In order to ensure that the water supply is of potable quality, it is essential that the source of water supply is acceptable. Water that comes from a source that is protected from human or environmental contamination such as the municipal water supply is acceptable without further treatment. Sources that may be exposed to human or environmental contamination such as wells or surface water will require treatment such as chlorination or another equivalent treatment. Source intakes must be positioned to prevent contamination of the water.

If water is to be stored, storage tanks must be designed and maintained in a way that prevents contamination. Tanks must be protected from potential environmental contamination, and have tight fitting lids or covers. Fittings for hose and pipe attachments must be constructed so that connections are easily cleaned and sanitized, and are secure so as to prevent contamination of water when filling with water or drawing water. All tanks, pipes and fittings must be made of material suitable for water and food handling: corrosion resistant, smooth, free of crevices and seams and easily dismantled for inspection and cleaning where appropriate.

*The standard for **source/storage** will be met when:*

(FA.06.01.03.01) Water comes from an acceptable source. The operator possesses written proof that water meets the requirements of the Ontario Water Resources Act for potable water.

(FA.06.01.03.02) Water from well or surface water sources that may be exposed to human or environmental contamination is treated with chlorine or another equivalent treatment.

(FA.06.01.03.03) Source intakes are positioned to prevent contamination of the water supply.

(FA.06.01.03.04) Storage tanks, and all hoses and fittings are designed and maintained in a way that prevents contamination.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.06.01.04**
ELEMENT:	**Protection from Contamination**
FACTOR:	Water
AREA:	Water Quantity, Quality and Treatment
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.32 (1).

"Every establishment shall be provided with a supply of potable water that has a coliform bacteria count of not more than 2 per hundred millimeters and is under a minimum operating pressure of twenty pounds per square inch"

Rationale: Water supplies within an establishment must be protected from contamination. Hoses and other plumbing connections should be equipped with vacuum breakers to prevent back-siphonage in submerged water lines. Cross-connections must be avoided.

*The standard for **protection from contamination** will be met when:*

(FA.06.01.04.01) Hoses and other plumbing connections are equipped with vacuum breakers to prevent back-siphonage.

(FA.06.01.04.02) There are no cross-connecting water lines that may lead to contamination of the water system.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.06.01.05**
ELEMENT:	**Temperature Range**
FACTOR:	Water
AREA:	Water Quantity, Quality and Treatment
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.31, s.40.

s.31 Every establishment shall be provided with sanitary washbasins in locations that are visible from the working area, equipped with hot and cold running water, liquid or powdered soap and air dryers or single service towels."

s.40 "Every cannery and every fresh-fish, freezing or semi-preserving establishment shall be provided with hot water that is maintained at a minimum temperature of 110°F in sufficient quantity for the operations of the cannery or fresh-fish, freezing or semi-preserving establishment, as the case may be."

Rationale: It is essential that water of an appropriate temperature is available for operational requirements and cleaning needs throughout the establishment. Insufficient water temperatures may prevent effective cleaning and sanitizing of the establishment. For cleaning operations, lukewarm potable water at a temperature ranging from 43-50°C (110-122°F) is used.

While operational requirements vary, most processing steps do not require water to be at temperatures greater than 49°C (120°F). Excessively hot water may be detrimental to the cleaning process, by 'cooking' proteins onto the soiled surfaces, and causing active chemicals to be inactivated.

The temperature of water therefore, in the hot water tank, may be in the range of 52-54°C (125-130°F) so that the temperature at the nozzle is in the range 43-50°C (110-122°F). A minimum acceptable water temperature at the nozzle is 43°C (110°F) while a maximum acceptable temperature at the nozzle is 54°C (130°F).

*The standard for **temperature range** will be met when:*

(FA.06.01.05.01) The temperature of the water supply at the hose nozzles used for cleaning and sanitizing equipment and facilities is maintained within the of 43 to 54°C (110–130°F).

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.06.01.06**
ELEMENT:	**Treatment**
FACTOR:	Water
AREA:	Water Quantity, Quality and Treatment
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.32 (1).

"Every establishment shall be provided with a supply of potable water that has a coliform bacteria count of not more than 2 per hundred milliliters and is under a minimum operating pressure of twenty pounds per square inch"

Rationale: Private water supplies may be susceptible to contamination. Recent surveys have indicated that approximately 37% of rural Ontario wells are contaminated with coliforms. Seasonal influences may increase the incidence of the problem. There is no sure way to ensure that a well is protected from contamination. In order to make certain that water is of potable quality, water originating from wells should be treated by approved disinfection methods that are capable of providing continuous disinfection while the water system is in operation. The methods approved for continuous disinfection include addition of chlorine, iodine, and treatment by ozonation or ultraviolet light. Ideally, the system should be equipped with means of monitoring and recording levels of the disinfection agent(s). Chlorination and ozonation both provide a means of continuous monitoring. With these systems, the operator must check for residuals on a daily basis to ensure that they are in a range that ensures disinfection and take corrective action if the system is not working properly. An acceptable chlorine test method must be used when chlorine is the disinfectant. Such methods measure not only total chlorine but also free available chlorine. Pool kits are not acceptable. A daily log must be maintained of such testing and be available for inspection. It is also necessary for the operator to conduct routine maintenance on the system and provide records (logs) of such maintenance. Results of testing or verification of system functionality are required prior to commencement of processing activities on a daily basis.

It is also necessary to verify the potability of municipal water supplies on a periodic basis. Municipal water supplies have been known to become contaminated, with resultant 'boil water advisories' issued. Lines within the plant may become a source of contamination regardless of the source, if lines are damaged or are poorly installed or maintained.

*The standard for **treatment** will be met when:*

(FA.06.01.06.01) An approved disinfection system is installed that provides continuous disinfection of the water supply.

(FA.06.01.06.02) Where applicable, records of disinfection agent residuals are maintained, and show that the system is monitored by the operator at least daily.

(FA.06.01.06.03) If an ultraviolet system is used, the operator monitors and documents the functionality of the disinfecting system at least daily.

(FA.06.01.06.04) If chlorination is used, an approved method (not a pool test kit) that determines total and available chlorine, is used for testing.

(FA.06.01.06.05) If ozonation is used, the functionality of the system is monitored and documented at least daily.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.06.01.07**
ELEMENT:	**Ice**
FACTOR:	Water
AREA:	Water Quantity, Quality and Treatment
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.32 (1).

"Every establishment shall be provided with a supply of potable water that has a coliform bacteria count of not more than 2 per hundred milliliters and is under a minimum operating pressure of twenty pounds per square inch"

Rationale: Ice is used in contact with food and food contact surfaces; therefore it must be manufactured from potable water. Ice purchased from a commercial source must be certified to ensure that is manufactured from potable water, and it must meet the same standards of bacteriological quality as ice manufactured in the plant. The operator must ensure that ice is purchased from a reputable manufacturer and should obtain a certificate of analysis, or monitor the quality as received.

If contaminated equipment is used to manufacture handle or store ice, the ice will become a source of contamination of fish and fish products. It is essential that ice manufactured within the establishment be made in equipment that is kept clean and will produce ice of acceptable quality. All equipment used for the manufacture, storage and handling of ice must meet the same standards as those for handling food.

Large ice bulk ice bins present sanitation challenges. Where people are required to walk into bins to shovel ice, they must wear clean clothing and footwear that is not worn elsewhere in the plant. Strict observation of separation procedures is essential. Large rooms used for ice must be constructed of approved material. Concrete walls and floors are porous and rough and impossible to sanitize adequately. Repeated scraping and shoveling will dislodge cement and gravel particles into the ice, creating a biological and physical hazard.

If ice has already been used to chill fish or fish products, it cannot be re-used for any other purpose that requires potable water. It may be contaminated with bacteria and is not longer considered potable.

*The standard for **ice quality and manufacture** will be met when:*

(FA.06.01.07.01) Ice manufactured at the establishment is potable, and is tested periodically to confirm potability.

(FA.06.01.07.02) Results of ice testing for potability tests are recorded and maintained, along with corrective actions taken when adverse results are found.

(FA.06.01.07.03) Ice purchased from a supplier is certified to be manufactured from potable water.

(FA.06.01.07.04) Equipment used for the manufacture, handling and storage of ice is approved.

(FA.06.01.07.05) Equipment used for the manufacture, storage and handling of ice is routinely cleaned and sanitized before use, and is maintained in a sanitary condition during use.

(FA.06.01.07.06) Personnel handle ice in a sanitary manner which prevents contact with unsanitary surfaces.

(FA.06.01.07.07) Ice that has been used to chill fish is not reused for any purpose that requires the use of potable water.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.06.01.08**
ELEMENT:	**Steam**
FACTOR:	Water
AREA:	Water Quantity, Quality and Treatment
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.32.

(1) "Every establishment shall be provided with a supply of potable water that has a coliform bacteria count of not more than 2 per hundred milliliters and is under a minimum operating pressure of twenty pounds per square inch"

(2) "Despite subsection (1), an establishment may be provided with water other than water referred to in subsection (1) for fire protection, boilers or auxiliary services provided that there is no connection between the water system used for fire protection, boilers or auxiliary services and the system providing water for other purposes"

Rationale: Steam that is to come into contact with food or food contact surfaces must be of potable quality, and must not contain any hazardous substances. Steam that is produced from non-potable water is acceptable, as long as it does not come into contact with food or food contact surfaces. Steam must be supplied in adequate quantities to meet operational requirements, and should be produced, handled and stored in a way that prevents contamination.

Chemicals used in boilers must be approved for use, and listed in the written sanitation program.

The uses of steam must be specified in the plant's documentation, ensuring that it is not used on fish products or containers.

*The standard for **steam** will be met when:*

(FA.06.01.08.01) Steam that comes in contact with food or food contact surfaces is potable.

(FA.06.01.08.02) Boiler chemicals are approved for use, and are listed in the written sanitation program.

(FA.06.01.08.03) Steam is supplied in quantities adequate for operational requirements.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.07.01.01**
ELEMENT:	**Offal Equipment Use and Identification**
FACTOR:	Plant Sanitation
AREA:	Waste Handling and Disposal
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.61.

"No person shall use an offal bin or receptacle in an establishment for a purpose other than the retention of offal."

Rationale: It is essential that fish offal, and offal bins and receptacles do not become a potential source of contamination. Offal bins and receptacles must not be used for any purpose other than the retention of offal. The use of offal bins and receptacles for holding or transporting edible products, or any other materials used in food processing is unacceptable. Offal bins and receptacles must be clearly marked to indicate their intended use.

*The standard for **offal equipment use and identification** will be met when:*

(FA.07.01.01.01) Offal bins and receptacles are used to store offal only

(FA.07.01.01.02) Offal bins and receptacles are marked to indicate their intended use

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.07.01.02**
ELEMENT:	**Waste Disposal**
FACTOR:	Plant Sanitation
AREA:	Waste Handling and Disposal
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.59.

"All sewage from an establishment, including liquid waste from fish processing operations, shall be disposed of in such a manner that the sewage is inaccessible to flies and the water supply for the establishment does not become contaminated."

Rationale: Sewage must not be allowed to become a source of contamination of the establishment, food, or the water supply. The waste disposal system should be designed to be effective for the intended purpose and should have sufficient capacity to handle all waste produced by the plant, so that overflow and backup do not occur. Waste should be handled and disposed of in a manner that does not attract pests, and the waste disposal system should be maintained in good order and repair.

The waste water and sewage disposal system must meet provincial building code and local waste water regulatory requirements.

For optimal waste management, an adequate means of separating organic matter from the plant effluent is required. Catch basins, grease traps or interceptors are designed to remove solid materials and fats from fluid wastes, but require management to prevent contamination of the plant. The effluent in catch basins must be skimmed regularly to remove organic material in a fresh state. Such skimming must not be moved through an edible area but may be rendered sterile in the inedible area or in an approved rendering plant. Catch basins, grease traps and interceptors must be located in an inedible section of the plant. The area surrounding an outside catch basin must have an impervious surface and should be sloped towards the catch basin.

*The standard for **waste water and sewage disposal** will be met when:*

(FA.07.01.02.01)	The waste disposal system has sufficient capacity to handle all waste produced
(FA.07.01.02.02)	The waste water and sewage disposal system meets all regulatory requirements.
(FA.07.01.02.03)	Waste is handled and disposed of in a manner that does not attract pests.
(FA.07.01.02.04)	The waste disposal system is maintained in good order and repair.

(FA.07.01.02.05) If the plant is equipped with a catch basin, grease trap or an interceptor used for the purpose of separating solid matter from the plant effluent, these facilities are not located in area where edible fish and fish products are being handled.

(FA.07.01.02.06) Skimming from catch basins, grease traps or interceptors are not moved through an area where edible product is being handled.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.07.01.03**
ELEMENT:	**Removal of Refuse/ Solid Waste Handling**
FACTOR:	Plant Sanitation
AREA:	Waste Handling and Disposal
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.60, s.80.

s.60 "Offal and other refuse shall be removed from the processing area at least once a day."

s.80 "No odoriferous substance shall be stored with fish in a holding or storage room in a frozen-storage establishment."

Rationale: Fish offal and other refuse must not be allowed to accumulate in food handling and processing areas and become a potential source of contamination. Offal and other refuse should be removed from processing areas as often as necessary to maintain proper sanitation of the establishment, or at least once a day.

Plant operators are required to provide adequate plant facilities and equipment for the collection, sanitary handling, storage and disposal of waste products on their premises. Solid waste materials and garbage must be removed on a regular basis and not allowed to accumulate in the vicinity of the plant. Hazards associated with such accumulation include the production of objectionable odours and the attraction of insects and vermin.

If incineration is used as a garbage disposal method, it is essential that the incineration facilities be located and operated in a manner that does not present a potential hazard of contamination to food products processed in the plant. Disposal must be carried out on a regular basis to prevent accumulation of refuse on the premises of the plant.

*The standard for **removal of refuse / solid waste/handling** will be met when:*

(FA.07.01.03.01)	Offal and other refuse is removed from processing areas at least daily, or more frequently if necessary.
(FA.07.01.03.02)	A solid waste disposal method is in place.
(FA.07.01.03.03)	The method of disposal does not constitute a food safety hazard.
(FA.07.01.03.04)	Where incineration is used as a garbage disposal method, there is no potential for contamination of food products.
(FA.07.01.03.05)	There are no odoriferous or incompatible substances or articles stored in freezers.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.08.01.01**
ELEMENT:	**Freezing**
FACTOR:	Temperature Control
AREA:	Temperature Control
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.50, s.51.

s.50 "Every freezing facility in a fresh-fish, freezing or semi-preserving establishment shall be capable of reducing the temperature at the centre of a one-inch thick block of unpackaged fillets to -21°C (-5°F) in two hours or less."

s.51 (1) "Every freezing facility in a fresh-fish, freezing or semi-preserving establishment where round or dressed fish is blast frozen shall be capable of freezing fish by means of air at a temperature of 30°C (-20°F) or colder, moving at a velocity of not less than four hundred feet per minute.

(2) Where fish is frozen by the method referred to in subsection (1), the fish shall be removed from the freezing facility immediately after the temperature at the centre of the thickest section of the fish reaches -21°C (-5°F)."

Rationale: Rapid freezing of fish products requires that the freezing facilities are of sufficient capacity to meet requirements. Rapid freezing will minimize the growth of pathogenic and spoilage organisms, and preserve the quality of the fish.

*The standard for **freezing** will be met when:*

(FA.08.01.01.01) Freezing facilities are able to reduce the temperature of a one-inch block of unwrapped fillets to -21°C (-5°F) in two hours or less.

(FA.08.01.01.02) Blast freezers have the capacity to freeze by means of air temperature at -30°C (-20°F) with an air velocity of not less than 400 feet per minute.

(FA.08.01.01.03) Once the temperature of the thickest section of fish in the blast freezer reaches -21°C (-5°F), it is removed from the blast freezer to the holding freezer.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.08.01.02**
ELEMENT:	**Storage Freezer Temperature Controls**
FACTOR:	Temperatures Control
AREA:	Freezer Temperature Control
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.78, s.79.

s.78 "Every room in a frozen-storage establishment in which frozen fish is stored shall be maintained at a temperature of -26°C (-15°F) or colder."

s.79 (1) "Every storage room in a frozen-storage establishment shall be equipped with a thermometer or other temperature-measuring device that is located in such a place that it indicates the average air temperature of the room.

(2) The temperature in a storage room in a frozen-storage establishment shall be read and recorded at least once each day and the record shall be retained for a period of not less than twelve months."

Rationale: It is essential to maintain product temperature once frozen. In order to be certain that temperature requirements are maintained, a regular program of monitoring and recording temperatures is required.

In a storage facility, anything that may impart an odour to the fish will irreversibly damage the product, and may have food safety implications.

*The standard for **frozen storage** will be met when:*

(FA.08.01.02.01) Frozen storage holding freezers are maintained at a temperature of -26°C (-15°F) or colder.

(FA.08.01.02.02) Every frozen storage freezer is equipped with a thermometer located where it will indicate the average air temperature in the room.

(FA.08.01.02.03) The temperature of each frozen storage freezer is read and recorded at least once daily, and the temperature record is retained for at least 12 months.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.08.01.03**
ELEMENT:	**Cooler Temperatures**
FACTOR:	Temperature Control
AREA:	Refrigerators Temperature Control
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.10.

"Fish that is intended for human consumption shall be adequately iced or chilled while being held or transported and shall be protected from contamination and the weather. "

Rationale: Maintenance of temperatures at or below 4°C (40°F) for fresh product is essential for food safety and preservation of fish products. Temperature abuse during holding or transport presents the real danger of food poisoning or food-borne illness, as well as loss of quality and freshness. Many bacteria thrive at temperatures above 4°C (40°F), while others grow and multiply at temperatures below 4° (40°F), temperatures in coolers must be maintained between 4°C (40°F), and -1°C (30°F) so that products held there can be maintained at that temperature. During operations, repeated door opening and production activity will affect the cooler's ability to maintain temperature. For that reason, refrigeration systems must be of sufficient capacity to meet requirements all the time. Regular monitoring and documentation of cooler and product temperatures throughout the operating period is an essential part of the process.

*The standard for **cooler temperature** will be met when:*

(FA.08.01.03.01)	Cooler temperatures are maintained between 4°C (40°F) and-1°C (30°F) at all times.
(FA.08.01.03.02)	Cooler temperatures are routinely monitored and recorded according during operations to a pre-determined schedule.
(FA.08.01.03.03)	When cooler temperatures are found to exceed 4°C (40°F), appropriate corrective measures are taken to protect Fish product.
(FA.08.01.03.04)	In coolers, condensation does not drip on or near exposed fish products.
(FA.08.01.03.05)	Condensate from refrigeration units is contained in properly built and maintained trays and lines that are connected to floor drains.
(FA.08.01.03.06)	There is no ice buildup on refrigeration units.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.09.01.01**
ELEMENT:	**Pest Control Procedures**
FACTOR:	Program/Policy
AREA:	Pest Control Activities
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.63.

"Every operator of an establishment shall maintain a rodent and insect control program in the establishment and, where a pesticide is used, it shall be used in such a manner that the pesticide does not contaminate any fish in the establishment."

Rationale: The entry of pests and rodents into a fish processing plant can cause serious food safety problems. Pests can be controlled through adequate construction, use of a variety of screening/protection devices, elimination of nearby breeding grounds, use of pest control firms, absence of food scraps, and by ensuring cleanliness at the plant and surrounding premises. When all other measures fail to keep vermin out of the plant, approved insecticides and rodenticides may be used.

Effective pest control requires regular inspections of the premises to identify evidence of pest infestation before damage and contamination occurs. Plant management must ensure that an effective and safe pest control program exists at the establishment, and is cited in sanitation program documentation. The pest control program must include designation of specific personnel to conduct thorough plant inspections and reporting of results.

The pest control program must also clearly state the supervisory responsibility of housekeeping along with the cleaning and sanitizing products, procedures and schedules. The program must require pest control activities to be carried out as frequently as necessary, and the frequency must be closely monitored.

*The standard for **procedures/activities** will be met when:*

(FA.09.01.01.01)	The operator has a comprehensive written pest control program that addresses the control of rodents, insects and any other pests.
(FA.09.01.01.02)	There is a written schedule for plant inspections and pest control procedures.
(FA.09.01.01.03)	Routine pest control inspections are completed by a designated, trained person.
(FA.09.01.01.04)	Records of completed pest control inspections, including locations, sightings and corrective actions, are maintained.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.09.02.01**
ELEMENT:	**Pesticide Use**
FACTOR:	Plant Sanitation/Pest Control
AREA:	Pest Control Activities
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.63.

"Every operator of an establishment shall maintain a rodent and insect control program in the establishment and where a pesticide is used, it shall be used in such a manner that the pesticide does not contaminate any fish in the establishment."

Rationale: Adequate plant construction and effective housekeeping operations must form the first steps in the prevention of initial entry of insects and rodents into a food processing establishment. In the instance that pests do gain entrance to the establishment, approved pesticides may be used for eradication. It is essential that pest control does not become a potential source of contamination for fish and fish products. Pesticides used within the establishment must be approved by the Canadian Food Inspection Agency (CFIA), and shown to be effective for the stated purpose when used at the concentration indicated on the label. MSDS sheets must be maintained at the plant for products in use. In order to effectively protect fish and fish products from pesticide contamination, the application and storage of the products used must be controlled. The application of pesticides must be undertaken by or under direct supervision of personnel knowledgeable about the products, and must be conducted in a manner that protects the safety of food products at the plant. For example, during spray or fogging applications, food contact surfaces must be protected and all food products must be removed from the vicinity. Before commencing operations, after spray or fogging application of pesticides, all food contact surfaces must be thoroughly washed, rinsed and sanitized. Pesticides must be properly labeled and stored in a locked area accessible only to authorized and properly trained personnel. Storage and labeling conditions must meet all applicable WHMIS legislation. All requirements for storage and use must be documented in sanitation program documentation.

*The standard for **pesticide use** will be met when:*

(FA.09.02.01.01)	The pest control program contains a written list of all pesticides and pest control devices currently in use.
(FA.09.02.01.02)	Bait boxes are placed in acceptable locations in the plant.
(FA.09.02.01.03)	Only designated, trained employees have access to pest control devices and pesticides.
(FA.09.02.01.04)	During application of pesticides, food products and surfaces are protected.

(FA.09.02.01.05) After pesticides are used, food contact surfaces are adequately washed and sanitized before the start of operations.

(FA.09.02.01.06) Pesticides are stored in a locked area accessible only to designated, trained personnel.

(FA.09.02.01.07) Storage and labeling of pesticides meet all applicable WHMIS legislation.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.09.02.02**
ELEMENT:	**Grounds and Beaches**
FACTOR:	Plant Sanitation/Pest Control
AREA:	Pest Control Activities
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.65.

"The grounds and beach of an establishment shall be kept clean."

Rationale: It is essential that an establishment's surroundings do not become a potential source of contamination. The grounds and beach of an establishment must be kept free from debris, and must be maintained to in a way that discourages the harbourage of pests. All unused equipment on the grounds of the establishment must be properly stored away, and grass and bushes should be cut and well maintained. A gravel perimeter of at least 1 meter is recommended and decorative plantings against or near the building are not permitted as they provide refuge and cover for pests.

The exterior of the building must be maintained in good condition, free of holes or openings that may offer entry points or nesting sites.

*The standard for **grounds and beaches** will be met when:*

(FA.09.02.02.01)	The grounds and beach of an establishment are kept clean.
(FA.09.02.02.02)	Unused equipment and material is stored away from the plant building in a manner that will discourage harbourage of pests.
(FA.09.02.02.03)	Grass and bushes are maintained in a way that will discourage the harbourage of pests.
(FA.09.02.02.04)	Decorative plantings are at least 1 meter from the building.
(FA.09.02.02.05)	All frequently used plant entrance/exit doors are self-closing.
(FA.09.02.02.06)	Plant entrance/exit doors are kept closed when not in use.
(FA.09.02.02.07)	The building exterior is well maintained and free of holes or openings that may offer entry points or nesting sites.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.09.02.03**
ELEMENT:	**Exclusion of Animals**
FACTOR:	Plant Sanitation/Pest Control
AREA:	Pest Control Activities
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.62.

"No person shall permit a dog or other animal to be in an establishment."

Rationale: The entry of dogs and other animals or birds into a fish processing plant constitutes a major food safety hazard because many infectious agents can be directly or indirectly transmitted by pets and birds to food. In addition, animal hair or bird feathers could become airborne and contaminate food products. Operators must ensure that fish is processed in an environment free of all possible biological, chemical and physical sources of contamination, so dogs and other animals or birds must not be permitted inside an establishment.

The presence of dogs, cats or other animals around the exterior of a building, especially near the entrances, also presents a potential contamination hazard for the processing environment. The use of cats as a means of rodent control is not accepted.

*The standard for **exclusion of animals** will be met when:*

(FA.09.02.03.01) Dogs, cats and other animals or birds are not allowed inside an establishment, or outside around the entrances.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.09.03.01**
ELEMENT:	**Contractor Specifications/Policies**
FACTOR:	Contracted Services/Pest Control
AREA:	Pest Control Activities
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.63.

"Every operator of an establishment shall maintain a rodent and insect control program in the establishment and, where a pesticide is used, it shall be used in such a manner that the pesticide does not contaminate any fish in the establishment."

Rationale: The entry of insects, birds, rodents and pets into a processing plant constitutes a serious Food safety hazard. Pest control is affected through adequate construction, use of a variety of screening/protection devices, elimination of nearby breeding grounds, use of specialist pest control firms, absence of food scraps and by ensuring cleanliness at the plant and surrounding premises.

Plant management may decide to contract the pest control program of the plant to an outside firm. In that case, the responsibilities and obligations of both parties (plant management and pest control firm) must be specifically detailed in the contract and documented in the sanitation program. The pest control company must be licensed and use pesticides approved for use in food establishments. The method of application, the concentration of products and any storage restrictions must be carried out according to the manufacturer's instructions with regard for ensuring the supply of safe and wholesome fish products.

*The standard for **specifications/approval** will be met when:*

(FA.09.03.01.01) The outside contractor for pest control possesses a license to use pesticides, and has provided the operator with a copy.

(FA.09.03.01.02) Where pest control services are contracted to an outside company, the plant's written pest control program includes a written contract with the contracting company, which specifies that legislated requirements will be met.

(FA.09.03.01.03) The contract provides written pest control procedures, schedules, equipment and chemicals, and identifies trained staff employed by the contractor to perform the work.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.09.04.01**
ELEMENT:	**Monitoring**
FACTOR:	Contracted Services/Pest Control
AREA:	Pest Control Activities
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.63.

"Every operator of an establishment shall maintain a rodent and insect control program in the establishment and, where a pesticide is used, it shall be used in such a manner that the pesticide does not contaminate any fish in the establishment."

Rationale: When all other measures fail to keep pests out of a plant, approved pesticides may be used. However, pest eradication measures involving chemical or biological agents must be undertaken by or under the direct supervision of personnel trained in the proper application and storage of these products. Food safety hazards arise from the improper use or storage of pesticides. Plant management may decide to contract the pest control program of the plant to an outside firm. In that case, the responsibilities and obligations of both parties (plant management and pest control firm) must be specifically detailed in the contract and documented in the sanitation program. The pest control company must use pesticides approved for use in food establishments and the method of application, the concentration of products and any storage restrictions are carried out according to the manufacturer's instructions and with regard for ensuring the supply of safe and wholesome meat. It is the responsibility of plant management to monitor the activities of the pest control firm, and ensure that the agreed-upon procedures and practices are followed. Monitoring procedures must be documented in the sanitation program.

The standard for monitoring will be met when:

(FA.09.04.01.01)	The activities of the contracting company are routinely monitored by a designated, trained, plant employee.
(FA.09.04.01.02)	The procedure for monitoring the contracted pest control company is included in the written pest control program.
(FA.09.04.01.03)	Monitoring of the pest control contractor's activities is recorded.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.10.01.01**
ELEMENT:	**Holding and Shipping Temperatures**
FACTOR:	Temperature Control
AREA:	Shipping and Transport Facilities
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.10, s.12.

s.10 "Fish that is intended for human consumption shall be adequately iced or chilled while being held or transported and shall be protected from contamination and the weather."

s.12 "Frozen fish, while under the control of a carrier, shall be kept refrigerated in such a manner that, when it is delivered to its destination, the temperature of such fish will not have increased more than 10°F from the temperature at the time it was loaded."

Rationale: Maintenance of temperatures at or below 4°C (39°F) for fresh product, and -21°C (-5°F) for frozen product is essential for food safety and preservation of fish products. Temperature abuse during holding or transport presents the real danger of food poisoning or food-borne illness, as well as loss of quality and freshness.

Frozen fish must be kept frozen until use or processing. Repeated thawing and re-freezing will seriously affect the value of the product and present significant food safety risks. Bacteria are not destroyed by freezing, and will multiply when conditions are favourable. Some bacteria grow well in refrigerated conditions, presenting a food safety risk. Some bacteria produce toxins which will persist in thawed and re-frozen fish.

*The standard for **temperature control during transport** will be met when:*

(FA.10.01.01.01) Fresh fish that is held for transport, or that is being transported, is iced and chilled to 4°C (39°F) or colder, and maintained at that temperature.

(FA.10.01.01.02) Frozen fish are kept frozen during transport.

(FA.10.01.01.03) Transport vehicles are equipped with refrigeration facilities that will maintain products at or below 4°C (39°F) if refrigerated, or at or below -21°C (-5°F) if frozen.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.10.02.01**
ELEMENT:	**Transportation Conditions**
FACTOR:	Shipping
AREA:	Shipping and Transport Facilities
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.81.

"Every vehicle used for the marketing of fish shall contain facilities that,

(a) protect the fish from contamination and weather;
(b) are in good repair and in a clean and sanitary condition;
(c) where fresh or semi-preserved fish are being transported will maintain the fish in a chilled condition; and
(d) where frozen fish are being transported will prevent the temperature of the frozen fish from increasing more than (10°F) during transportation."

Rationale: Transportation represents an important link in the chain of fish production. The vehicle used in the transport of fish products is technically an extension of the plant premises. When considered in this sense, the vehicle acts as the interim storage facility from the plant to its point of destination. Construction, maintenance, sanitation and refrigeration standards must be adequate and adhere as closely as reasonably possible, to the standards required of the plant. All internal finishes must be in a good state of repair and made of corrosion-resistant material which does not affect fresh fish products or otherwise render them unwholesome. They must be smooth, impervious and easy to clean and disinfect.

*The standard for **transport vehicles** will be met when:*

(FA.10.02.01.01) The interior of fish product transport vehicles is constructed of approved material that is smooth, durable, impervious to moisture, non-absorbent, non-toxic, and easy to clean and disinfect, and is installed in an acceptable manner.

(FA.10.02.01.02) The interior of transport containers is maintained in good condition.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.10.02.02**
ELEMENT:	**Protection from Contamination and Weather**
FACTOR:	Shipping
AREA:	Shipping and Transport Facilities
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.11.

"Fish that is intended for human consumption shall be protected from contamination and the weather during loading and unloading."

Rationale: Loading and unloading facilities are an indispensable element in the operation of a fish plant. These facilities should be designed in a manner that provides sufficient receiving and shipping areas for fish and fish products as well as dry goods such as ingredients, cleaning supplies and packaging materials, etc. Walls, ceilings and floors must be constructed to the same standards as any other product handling room.

If product that is shipped or received is held in the shipping and receiving area, and not immediately moved to refrigerated storage or transport vehicle, then the shipping and receiving area must be refrigerated to prevent temperature abuse.

These areas should be separate from entrances for customers and staff and they should be entirely separate from offal storage and pickup. Receipt or shipping of fish products, ingredients or packaging supplies in incompatible areas provides opportunities for contamination. Shipping and receiving areas must be kept clean and in a good functioning order, and maintained in a sanitary condition.

Shipping and receiving doors must not open directly into coolers and processing rooms, so that any incidental contamination from the outside environment can be minimized. There must be doors that close effectively, and the immediate area outside must be hard-surfaced so that it can be washed to minimize dust and build-up of insects. An overhang with eaves troughs over doorways will minimize the potential for rainwater to enter the building, or contaminate product containers.

Shipping ramps that slope toward the building require a functional drain to eliminate standing water.

*The standard for **shipping and receiving** will be met when:*

(FA.10.02.02.01) A separate shipping/receiving facility is provided for fish and fish products, and ingredients and packaging materials.

(FA.10.02.02.02) The shipping/receiving facility is constructed of approved materials, to the same standard as a processing room.

(FA.10.02.02.03) The exterior driveway and/or ramps adjacent to the shipping/receiving facility are hard surfaced and appropriately sloped

and drained to prevent accumulation of standing water, and permit adequate cleaning and pest control.

(FA.10.02.02.04) Shipping doors do not open directly into processing rooms or holding facilities where product is exposed.

(FA.10.02.02.05) Where shipped or received loads are held or assembled in the shipping/receiving facility, the area is refrigerated.

(FA.10.02.02.06) Inedible material and offal shipping facilities are separate from facilities used for shipping and receiving of fish, fish products, or any product used for edible fish processing.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.10.03.01**
ELEMENT:	**Receiving Monitoring**
FACTOR:	Receiving
AREA:	Shipping and Transport Facilities
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.11.

"Fish that is intended for human consumption shall be protected from contamination and the weather during loading and unloading."

Rationale: Fish and fish products, processing ingredients and packaging material have the potential for contaminating product in the plant and the processing environment if they do not meet accepted standards for temperature, product and package integrity, cleanliness of the delivery vehicle and product containers.

Not only is food safety is jeopardized, but productivity and product value may be diminished substantially.

It is therefore essential to maintain control over incoming loads of fish and materials, by establishing a formal monitoring and recording policy to check all loads.

*The standard for **receiving** will be met when:*

(FA.10.03.01.01) Fish, and fish products and other incoming loads are delivered in acceptable, clean and sanitary, and where applicable, refrigerated vehicles.

(FA.10.03.01.02) Fish, and fish products received are immediately stored in an appropriate area under required temperature conditions.

(FA.10.03.01.03) There are written procedures in place for monitoring the product integrity and suitability of received loads of fish products, packaging materials and ingredients.

(FA.10.03.01.04) There are written procedures to be followed when received loads to meet food fish safety requirements.

(FA.10.03.01.05) The condition of each load of fish products, packaging materials and ingredients received is recorded on a suitable form, together with corrective actions taken when deviations are found.

(FA.10.03.01.06) With each load of fish received, there is documentation of the origin of the fish.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.11.01.01**
ELEMENT:	**Product Labels**
FACTOR:	Labeling to Meet Regulation.
AREA:	Further Processing
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.14, s.15, s.16 (1), s.17.

s.14 "No person shall mark or label a container of fish with a quality designation or sell a container of fish that is so marked or labeled unless,
- (a) a standard for that quality has been specified in this Regulation or the Fish Inspection Regulations (Canada); and
- (b) the fish in that container meets that standard."

s.15 (1) "Every carton and case in which containers of fish are packed at an establishment shall be legibly marked on one end in such a manner that the name of the establishment and the day, month and year of processing can be determined by an inspector.

(2) Every container in which pickled, spiced or marinated fish are packed shall be legibly marked in such a manner that the name of the establishment and the day, month and year of processing can be determined by an inspector."

s.16 (1) "Every can of fish that is packed in an establishment shall be embossed on one end in such a manner that the name of the establishment and the day, month and year of processing can be determined by an inspector."

s.17 "Despite subsection 16 (1), any hermetically sealed glass container containing fish is exempt from the embossing requirement referred to in that subsection, if such container or the label affixed to it is otherwise permanently marked in such a manner that the name of the establishment and the day, month and year of processing can be determined by an inspector."

Rationale: Labeling of fish containers clearly and accurately is a mandatory requirement under Ontario and Canadian Acts and Regulations. The purposes of labeling are to inform the consumer of the contents of the package, identify the product and its size or weight, common name, ingredients if any, storage instructions, name and address of packer or manufacturer, lot identification, packaging date or indicator of shelf life, prevent damage to the health of the consumer in terms of food borne illness or allergens, and to prevent fraud.

Containers such as cans and bottles sold to the consumer must be labeled according to the Consumer Packaging and Labeling Act.

Individual containers may be coded by the processor with the required information, provided that the interpretation of the code's meaning is available to the inspector.

*The standard for **product labels** will be met when:*

(FA.11.01.01.01) Containers of fish are only marked with a quality designation that is specified in the Fish Inspection Act and Regulations (Ontario), or the Fish Inspection Act and Regulations (Canada).

(FA.11.01.01.02) Fish in containers marked with a quality designation meet the quality standard specified on the container.

(FA.11.01.01.03) All cartons and cases used to pack containers of fish are legibly marked on one end with the name of the establishment, and the processing date (day, month, and year) in such a manner that the information can be readily determined by an inspector.

(FA.11.01.01.04) All containers of pickled, spiced or marinated fish are legibly marked with the name of the establishment, and the processing date (day, month, and year) in such a manner that the information can be determined by an inspector.

(FA.11.01.01.05) All cans of fish are embossed on one end, identifying the name of the establishment, and the processing date (day, month, and year) in such a manner that the information can be determined by an inspector.

(FA.11.01.01.06) All hermetically sealed glass containers containing fish are permanently marked, or have a label affixed identifying the name of the establishment, and the processing date (day, month, and year) in such a manner that the information can be determined by an inspector.

(FA.11.01.01.07) All containers to be sold to consumers are labeled in accordance with the requirements of the Consumer Packaging and Labeling Act.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.11.02.01**
ELEMENT:	**Packaging Materials**
FACTOR:	Packaging
AREA:	Further Processing
COMPONENT:	Fish Audit

Authoritative Source:

> *Codex Alimentarius, Recommended International Code of Practice for Smoked Fish, CAC/RCP 25-1979, 4.5, Volume 9*
>
> "Packaging materials should be of type approved by the official agency having jurisdiction and be clean and store in a hygienic manner. Packaging should be carried out under conditions that prevent contamination of the product"

Rationale: Smoked fish products should be packed for transport so that there is not direct contact with ice or melt-water. Wet strength paper or plastic films should be used to wrap the products and separate them from ice used in packing. Immediately after weighing, packaging should be carried out quickly and efficiently. As stated in Codex Alimentarius, fish must be packaged in acceptable containers that protect the product at every stage of production, from handling fresh fish or fillets to packaging of smoked fish and canning.

The CFIA sets standards for packaging material for all food products in the Reference Listing of Accepted Construction Materials, Packaging Materials and Non-Food Chemical Products. All packaging material must be approved, and then used as it is intended so that fish products are protected from deterioration, recontamination or spoilage.

*The standard for **packaging material** will be met when:*

(FA.11.02.01.01) All containers and packages used for packaging fish products are Canadian Food Inspection Agency (CFIA) approved, and are listed in the CFIA Reference Listing of Accepted Construction Materials, Packaging Materials and Non-Food Chemical Products.

(FA.11.02.01.02) Containers and packages are clean and in good condition when used, and are used as intended.

(FA.11.02.01.03) After packaging, packages of fish product are handled in such a way that the package and product integrity are protected from physical damage or temperature abuse.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.11.02.02**
ELEMENT:	**Packaging Equipment**
FACTOR:	Packaging
AREA:	Further Processing
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.3, s.68, s.75, s.76.

s.3 "Fish shall be packed in new, clean and sound containers."

s.68 "Every establishment and all equipment and utensils used in the operation of an establishment shall be kept in good repair and in a clean and sanitary condition."

s.75 (1) "Every utensil that comes in contact with fish before it is canned or packaged shall be thoroughly cleaned and disinfected at least once during each work shift and at the end of each work shift.

(2) Every utensil referred to in subsection (1) shall be air-dried and stored in a sanitary manner at the end of each working day."

s.76 "All equipment, including conveyor belts and tables, that comes in contact with fish that is being processed, other than canned and packaged fish, shall be cleaned and disinfected at the end of each work shift."

Rationale: Packaging is the final step in the manufacture of fish products. Products which have been cooked have already been subjected to the most important critical control point in their manufacture.

It is essential that the packaging area and equipment be located so that cross-contamination is avoided. Product flow in a single direction is essential. It is particularly important that no contact is possible, either direct or indirect, between raw and cooked products.

Packaging equipment should also be located to allow for accessibility for cleaning and sanitizing as well as maintenance and servicing.

*The standard for **packaging equipment** will be met when:*

(FA.11.02.02.01) Packaging equipment is constructed of acceptable material, and is designed so that it can be cleaned and sanitized.

(FA.11.02.02.02) Packaging equipment is located so that the flow of products is in one direction only, and so that no cross-over or backtracking of cooked or smoked and raw products occurs.

(FA.11.02.02.03) Packaging equipment operates consistently and reliably to provide package seals and closures which will protect the integrity and safety of fish products.

(FA.11.02.02.04) Packaging equipment is maintained in clean condition during operations so that fish products are not contaminated by unacceptable fish products, lubricants or any other extraneous or toxic material.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.11.03.01**
ELEMENT:	**Breaded Fish Sticks**
FACTOR:	Product Standards
AREA:	Further Processing
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.20 (1).

"Fish sticks for sale in Ontario shall,
(a) if cooked, contain a minimum of 66 per cent by weight of fish flesh;
(b) if uncooked, contain a minimum of 75 per cent by weight of fish flesh;
(c) weigh not less than one ounce each;
(d) be free from defects; and
(e) not be prepared from comminuted fish flesh."

Rationale: In order to maintain product acceptance and uniformity in the marketplace, it is necessary to establish specific minimum content standards for processed fish products. This assists in maintaining a degree of competitiveness among manufacturers for a uniform product, and enables the consumer to have confidence in the content of processed fish product packages.

*The standard for **fish sticks** will be met when:*

(FA.11.03.01.01) Cooked fish sticks contain a minimum of 66 per cent by weight of fish flesh.

(FA.11.03.01.02) Uncooked fish sticks contain a minimum of 75 per cent by weight of fish flesh.

(FA.11.03.01.03) Fish sticks weigh at least one ounce each.

(FA.11.03.01.04) Fish sticks are free of defects.

(FA.11.03.01.05) Fish sticks are not prepared from comminuted fish flesh.

(FA.11.03.01.06) The operator has a documented process for monitoring and verifying that standards for cooked and raw fish sticks are met for every batch.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.11.03.02**
ELEMENT:	**Breaded Scallops**
FACTOR:	Product Standards
AREA:	Further Processing
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.21.

"Breaded scallops for sale in Ontario shall,
(a) if cooked, contain a minimum of 66 per cent by weight of scallop meat; and
(b) if uncooked, contain a minimum of 75 per cent by weight of scallop meat."

Rationale: In order to maintain product acceptance and uniformity in the marketplace, it is necessary to establish specific minimum content standards for processed fish products. This assists in maintaining a degree of competitiveness among manufacturers for a uniform product, and enables the consumer to have confidence in the content of processed fish product packages.

*The standard for **breaded scallops** will be met when:*

(FA.11.03.02.01) Cooked breaded scallops contain not less than 66 per cent by weight of scallop meat.

(FA.11.03.02.02) Uncooked breaded scallops contain not less than 75 per cent by weight of scallop meat.

(FA.11.03.02.03) The operator has a documented process for monitoring and verifying that standards for cooked and raw scallops are met for every batch.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.12.01.01**
ELEMENT:	**Smokehouse Design and Function**
FACTOR:	Smoking
AREA:	Smoke Fish
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.39, s.43, s.44.

s.39 "No cannery and no fresh-fish, freezing or semi-preserving establishment shall have exposed pipe over any working surface on which fish is processed."

s.43 "Every surface in a cannery and a fresh-fish, freezing or semi-preserving establishment, other than a cutting, filleting and skinning board on which fish is processed, shall be made of a non-corrodible material, other than wood, and every joint on the surface shall be smooth and watertight."

s.44 "Every receptacle, tray, tank, vat and utensil used for processing fish in a cannery and a fresh-fish, freezing or semi-preserving establishment shall be made of a non-corrodible material, other than wood, and shall have smooth surfaces free from cracks and crevices."

Rationale: Smoked fish products are generally intended as ready-to-eat products. In order to uniformly smoke all fish contained in the house, it is necessary to circulate heated air and smoke throughout the chamber. Fish in the smokehouse must be hung freely for equal exposure to heat and smoke. The smokehouse must be designed to provide adequate product spacing to avoid touching, to allow uniform and constant flow of smoke, and to maintain constant temperature throughout the smoking process. The products to be smoked must be similar in size, shape and weight to allow uniform distribution of the temperature and smoke. Adequate clearance between the product and walls, ceiling, and floor of the smokehouse must be maintained. Such conditions will permit equal exposure of all product surfaces to heat and smoke.

The standard for smokehouse design and construction will be met when:

(FA.12.01.01.01)	The smokehouse meets the general design requirements for all fish processing equipment.
(FA.12.01.01.02)	The smokehouse has provision for temperature control.
(FA.12.01.01.03)	The smokehouse has provision for circulation of smoke and heat throughout the house.
(FA.12.01.01.04)	Cold spots are monitored to assess the effectiveness of the circulation system.
(FA.12.01.01.05)	The smokehouse design allows for sufficient spacing between products and adequate heat and smoke circulation between each fish or fish product.
(FA.12.01.01.06)	The house is loaded so that there are no fish or fish products touching the walls or each other.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.12.01.02**
ELEMENT:	**Temperature and Storage of Smoked fish**
FACTOR:	Smoking
AREA:	Smoke Fish
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.10

s.10 "Fish that is intended for human consumption shall be adequately iced or chilled while being held or transported and shall be protected from contamination and the weather".

Rationale: Smoke fish products are generally intended as ready-to-eat products. As such they require proper refrigeration and handling during packaging and storage to prevent temperature abuse and post-processing contamination.

*The standard for **smoking fish** will be met when:*

(FA.12.01.02.01) During handling and processing of fish before and after smoking, strict observance of hygienic and good manufacturing processes are observed

(FA.12.01.02.02) The final product temperature of lightly salted (<5% salt) smoke fish is kept below 3°C (37°F) at all times.

(FA.12.01.02.03) Hot smoked fish are heated to an internal temperature of 65°C (149°F). for at least 30 minutes, with 5% of the water phase salt concentration as measured in the thickest segment of the muscle.

(FA.12.01.02.04) If the water phase salt concentration is between 3.5 and 5%, the internal temperature must reach at least 82°C (180°F) for 30 minutes.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.12.01.03**
ELEMENT:	**Suitability of Fish for Smoking**
FACTOR:	Smoking
AREA:	Smoke Fish
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): R.S.O. 1990, c. F.18, s.7 (1).

"No person shall sell, offer for sale, or hold in possession for sale, any fish intended for human consumption that is tainted, decomposed or unwholesome."

Rationale: Production of safe fish products demands fish and fish products that are clean, wholesome, and in a condition fit for human consumption. Any degree of decomposition of fish products, any rancidity, abnormal or off flavour, and any presence of harmful microorganisms, chemicals or substances in fish and fish products will represent a serious risk to the consumer of that product. No amount of smoking can restore the wholesomeness of food products that have been allowed to decompose, become tainted or unwholesome

*The standard for **suitability of fish for smoking** will be met when:*

(FA.12.01.03.01) Fish to be used for smoking are handled with the same care as those which are intended to be marketed as fresh.

(FA.12.01.03.02) Fish to be used for smoking are clean and sound and fit for human consumption.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.12.02.01**
ELEMENT:	**Time/Temperature Control/Monitoring**
FACTOR:	Smoke House Control
AREA:	Smoke Fish
COMPONENT:	Fish Audit

Authoritative Source:

N/A

Rationale: Smoking of fish products can be conducted without heat treatment (cold-smoked products), with partial heat treatment, or with full cooking of products. When fish products are cooked by any means, including smoking in a smokehouse, the cooking process must be designed to destroy pathogenic micro organisms. It is essential that the time/temperature relationship of the process be controlled sufficiently to ensure that specific internal temperature is achieved within the product. In the operation of a smokehouse, therefore, it is mandatory that the smokehouse be equipped with a means of measuring and monitoring the temperature as well as a means of measuring the internal temperature of the product. The operator should also be aware of the required end-point temperature of the product.

*The standard for **time/temperature control** will be met when:*

(FA.12.02.01.01) The smokehouse is equipped with a means of measuring and monitoring the temperature of the smokehouse.

(FA.12.02.01.02) The smokehouse is operated in a manner that allows for measuring the internal temperature of the products that are being cooked.

(FA.12.02.01.03) The product is held at a constant temperature for a specified period of time.

(FA.12.02.01.04) The temperature of the smoke house or kilns must be maintained constantly uniform and with uniform volume and quality of smoke (there is uniform distribution of the heat and smoke over the product), and complete cooking of all smoked fish in the house. When products that differ in size, shape and weight are smoked together, all pieces are exposed to sufficient heat & smoke to ensure complete cooking.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.12.02.02**
ELEMENT:	**End Point Determination**
FACTOR:	Smoke House Control
AREA:	Smoke Fish
COMPONENT:	Fish Audit

Authoritative Source:

Codex Alimentarius, Recommended for Smoked Fish CAC/RCP 25 – 1979, section 4.4.5

"In preparations for smoking, care should be taken to arrange the fish on tenders, hooks or trays in such a manner as to provide for uniform smoke absorption, temperature exposure and dehydration"

"During cold smoking the temperature of the fish should not exceed a level at which heat coagulation of protein takes place"

Rationale: When fish products are cooked, it is important to ensure that the entire product is cooked by ensuring adequate heat penetration throughout. It is essential to determine the internal temperature of the product to ensure that the required end point (a temperature in the range of 65-77°C (149-171°F)) has been reached. For the cooked fish to be safe for consumption, the internal temperature must have reached the specific cooking temperature for the product. To achieve this, the internal temperature should be monitored during the cooking period. The thermometers used for this purpose should be periodically calibrated.

Cold smoked product temperature should not exceed 29°C (84°F).

*The standard for **end point determination** will be met when:*

(FA.12.02.02.01) The internal temperature of the fish product is monitored during cooking time to ensure that the appropriate endpoint temperature has been reached.

(FA.12.02.02.02) When products that differ in size, shape and weight are smoked together, uniform absorption of heat & smoke is obtained by all.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.12.02.03**
ELEMENT:	**Smoke Schedule Determination**
FACTOR:	Smoke House Control
AREA:	Smoke Fish
COMPONENT:	Fish Audit

Authoritative Source:

Facilities Inspection Manual: Canadian Food Inspection Agency (CFIA) Chapter 3, Subject 4 Reference Standard and Compliance Guidelines

s.2.1 "Processors are required to identify product and process information in the form of a Product Description, Process Flow Diagram and where applicable, an Establishment Floor Plan."

s.2.1.1 "The Product Description must identify those product attributes and characteristics that are important in ensuring a safe and acceptable fish product."

s.2.1.2 "The Process Flow Diagram must outline all of the production steps and assists in identifying those steps that are important in processing a safe fish product meeting all regulatory requirements".

Rationale: It is important for the operator in a fish plant to determine the optimum cooking and smoking schedule for each type of product in a particular smokehouse. Once such schedules are determined, they should be recorded, maintained and followed with every batch. The preparation of these schedules will give consistent yields, uniform products, and ensure a safe product.

The standard for smoke schedule determination will be met when:

(FA.12.02.03.01) There are written optimum smoking and cooking schedules for each type of product in each smokehouse

(FA.12.02.03.02) Each batch cooked in the smokehouse is cooked according to the predetermined schedule for that product.

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.13.01.01**
ELEMENT:	**Canning Procedures and Requirements**
FACTOR:	Canning Fish
AREA:	Canning
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.18, s.19, s.46, s.49, s.52, s.69.

s.18 "Canned fish shall be sterilized so that the product,
(a) is free from micro-organisms capable of development under normal conditions of storage; and
(b) does not contain any substances originating from micro-organisms in amounts that may represent a hazard to health."

s.19 "All canned fish, except canned fish packed in flat drawn cans, shall have sufficient vacuum to ensure that can ends do not bulge when the product is heated to a temperature of 35°C (95°F)."

s.46 "Every conveyor belt in a cannery and a fresh-fish, freezing or semi-preserving establishment that comes in contact with fish, other than canned fish or packaged fish, shall be fitted with a spray washer and, where practical, a scraper."

s.49 "Every cannery shall be provided with steam of a supply and at a pressure sufficient for the operations of the cannery."

s.52 Every cannery shall be equipped with one or more retorts equipped with,
(a) a mercury-in-glass thermometer;
(b) a pressure gauge;
(c) a steam spreader; and
(d) venting valves."

s.69 "Every operator of a cannery shall keep at the cannery a record for a period of not less than twelve months of the sterilization treatment used for each batch of fish at the cannery."

Rationale: Canning of fish and other low acid foods is a process that must be done with considerable knowledge and care. The risks associated with an inappropriate or failed process are great. A serious concern is the potential for food poisoning with the botulism toxin produced by the organism *Clostridium botulinum.* Botulism toxicity causes serious illness, and is lethal in many cases. The primary purpose of canning is to heat treat food products under pressure at temperatures above the boiling point of water for a period long enough to destroy *Clostridium botulinum* spores, then to maintain container integrity so that recontamination cannot occur. A properly equipped cannery with suitably designed retorts, can fillers and closers and all other necessary equipment if essential.
Canning of food products must be done under strictly controlled procedures to ensure commercial sterility. All steps must be rigorously followed and documented.

The standard for ***canning procedures and facilities*** *will be met when:*

(FA.13.01.01.01)	The cannery is equipped with a boiler system that will provide sufficient steam under pressure for the volume of fish canned on the premises.
(FA.13.01.01.02)	The cannery has one or more retorts each of which is equipped with a mercury in glass thermometer, a pressure gauge, a steam spreader, and venting valves.
(FA.13.01.01.03)	The operator uses an written, approved process to can fish, and the process is followed.
(FA.13.01.01.04)	Each batch is monitored and monitoring results are recorded on a permanent chart, indicating time and temperature. These records are retained for one year.
(FA.13.01.01.05)	Representative cans of each batch are tested for container integrity and effectiveness of the canning and sealing equipment.
(FA.13.01.01.06)	Canned fish are sterilized so that the product is commercially sterile. Samples are taken at regular intervals to verify sterility.
(FA.13.01.01.07)	Canned fish are free of any substances that may represent a hazard to health.
(FA.13.01.01.08)	Canned fish are under sufficient vacuum so that ends do not bulge when cans are heated to 35°C (95°F)

STANDARD OF COMPLIANCE

REFERENCE NO.:	**FA.13.01.02**
ELEMENT:	**Cooling Water in Canneries**
FACTOR:	Canning Fish
AREA:	Canning
COMPONENT:	Fish Audit

Authoritative Source:

Fish Inspection Act (Ontario): Regulation 456, R.R.O. 1990, s.70.

"All water used in a cannery for cooling canned fish shall be chlorinated to give a chlorine residual of at least two parts per million."

Rationale: During the cooling process, there may be very small holes or defects in cans that could allow cooling water to be pulled in by the negative pressure (vacuum) created. If the water is chlorinated, the possibility of re-contamination of the contents is minimized. Most small can defects will shrink and seal on cooling and will not be a problem.

It is essential to test the chlorine levels frequently and document findings, using a testing kit that provides accurate readings. A pool testing kit is not adequate for the purpose.

*The standard for **cannery cooling water** will be met when:*

(FA.13.01.02.01)	All water used for cooling canned fish contains a chlorine residual of at least 2 parts per million.
(FA.13.01.02.02)	The operator uses an acceptable chlorine testing device to monitor chlorine levels in the cooling water.
(FA.13.01.02.03)	The operator monitors and verifies chlorine levels in the cooling water on a minimum frequency of twice each day, and more often if required by production volumes.
(FA.13.01.02.04)	Chlorine levels in cooling water are recorded in a permanent chart and retained for at least one year.

Appendix – 1

The following is a copy of the Fish Inspection Act, R.S.O. 1990, F.18 and regulation as amended Quality Control (R.R.O, 1990, Reg. 456) for reference use only. This is not an office consolidation copy. Queen's Printer Office Consolidation copies can be found at www.e-laws.gov.on.ca and ordered by contacting Publications Ontario **1-800-668-9938 Toll Free or (416) 326-5300**.

Fish Inspection Act

R.S.O. 1990, CHAPTER F.18

Amended by: 1993, c. 27, Sched.; 1997, c. 41, s. 117; 1999, c. 12, Sched. N, s. 2; 2001, c. 20, s. 58.

Note: On a day to be named by proclamation of the Lieutenant Governor, this Act is repealed by the Statutes of Ontario, 2001, chapter 20, section 58. See: 2001, c. 20, ss. 58, 61 (1).

Definitions

1. In this Act,

"container" means any type of receptacle, package, wrapper, or confining band used in holding, storing, packing or marketing fish; ("récipient")

"establishment" means a place where fish are handled, graded, processed or stored; ("établissement")

"fish" includes a shellfish, crustacean and any marine animal, and any parts, products or by-products of any of them; ("poisson")

"inspector" means a person appointed by the Minister as an inspector under this Act or a person declared to be an inspector, by virtue of his or her office, under this Act and includes a conservation officer under the *Fish and Wildlife Conservation Act, 1997*; ("inspecteur")

"marketing" means buying, selling, holding in possession, or offering or advertising for sale; ("commercialisation")

"Minister" means the Minister of Natural Resources; ("ministre")

"processing" includes cleaning, filleting, icing, packing, canning, freezing, smoking, salting, cooking, pickling, drying or preparing fish for market in any other way; ("traitement")

"regulations" means the regulations made under this Act; ("règlements")

"vehicle" includes a steamship, vessel, boat, railway-car, truck, carriage, car, aircraft and any other means of carriage used for transporting fish. ("véhicule") R.S.O. 1990, c. F.18, s. 1; 1997, c. 41, s. 117.

Appointment of inspectors

2. (1) The Minister may appoint an inspector or inspectors who shall perform such duties as may be prescribed by this Act or the regulations.

Idem

(2) The Lieutenant Governor in Council may declare that inspectors appointed under the *Fish Inspection Act* (Canada) are inspectors, by virtue of their office, under this Act. R.S.O. 1990, c. F.18, s. 2.

Powers of inspector

3. (1) An inspector may at any time,

(a) enter any establishment or vehicle used for the storage or carriage of fish and open any container that he or she has reason to believe contains fish;

(b) require to be produced for inspection or for the purpose of obtaining copies thereof, or extracts therefrom, any books, shipping bills, bills of lading or other documents or papers relating to the processing, transporting or marketing of fish; and

(c) take samples of fish for inspection.

Obstruction

(2) No person shall obstruct or impede an inspector in the discharge of his or her duties under this Act. R.S.O. 1990, c. F.18, s. 3.

Appeal

4. Any person who thinks themself aggrieved by a decision of an inspector in respect of any matter under this Act or the regulations may appeal to the Minister in accordance with the procedure prescribed in the regulations. R.S.O. 1990, c. F.18, s. 4; 1993, c. 27, Sched.

Seizure of fish and containers

5. (1) Whenever an inspector believes on reasonable grounds that an offence against this Act or the regulations has been committed, the inspector may seize all fish and containers by means of or in relation to which he or she reasonably believes the offence was committed.

Detention of fish and containers

(2) All fish and containers seized under subsection (1) may be detained for a period of two months following the day of seizure, unless during that period proceedings under this Act in respect of such fish and containers are taken, in which case the fish and containers may be further detained until such proceedings are finally concluded.

Disposal of fish seized

(3) Where a person is convicted of an offence under this Act or the regulations, any fish or containers seized under subsection (1) by means of or in relation to which the offence was committed shall be ordered to be forfeited to Her Majesty by the court convicting such person and may be disposed of as the Minister directs.

Where offence deemed committed in relation to fish seized

(4) Where a person pleads guilty to an offence against this Act or the regulations and fish or containers were seized under subsection (1) by an inspector as being fish or containers by means of or in relation to which the offence was committed, it shall be presumed by the court convicting such person, in the absence of evidence to the contrary, that the offence was committed by means of or in relation to such fish or containers. R.S.O. 1990, c. F.18, s. 5.

Falsification, etc., of documents

6. (1) No person shall falsify or unlawfully alter, destroy, erase or obliterate any document made or issued under this Act or the regulations, or any marks placed on any container under the authority of this Act or the regulations. R.S.O. 1990, c. F.18, s. 6 (1).

(2) REPEALED: 1999, c. 12, Sched. N, s. 2 (1).

Fish for sale to be fit for human consumption

7. (1) No person shall sell, offer for sale, or hold in possession for sale, any fish intended for human consumption that is tainted, decomposed or unwholesome. R.S.O. 1990, c. F.18, s. 7 (1).

Arrest without warrant

(2) An inspector may arrest without warrant a person that he or she believes on reasonable grounds is committing, has committed or is preparing to commit an offence under subsection (1).

Necessary force

(3) An inspector may use as much force as is necessary to make an arrest under subsection (2).

Release

(4) If an inspector arrests a person under subsection (2), he or she shall, as soon as practicable, release the person from custody, unless the inspector has reasonable grounds to believe that,

(a) it is necessary in the public interest for the person arrested to be detained, having regard to all the circumstances, including the need to,

(i) establish the identity of the person,

(ii) secure or preserve evidence of or relating to the offence, or

(iii) prevent the continuation or repetition of the offence or the commission of another offence; or

(b) the person arrested, if released, will not respond to the summons or offence notice or will not appear in court.

Person to be taken before justice

(5) Section 150 of the *Provincial Offences Act* applies if the person arrested is not released. 1999, c. 12, Sched. N, s. 2 (2).

Sale or possession under misleading name

8. No person shall sell, offer for sale, or hold in possession for sale, any fish or container under a name likely to mislead or deceive. R.S.O. 1990, c. F.18, s. 8.

Offence

9. (1) Every person who contravenes any of the provisions of this Act or the regulations is guilty of an offence and is liable on conviction to,

(a) in the case of an individual, a fine of not more than $25,000, or to imprisonment for a term of not more than two years, or to both; and

(b) in the case of a corporation, a fine of not more than $100,000.

Corporations

(2) If a corporation commits an offence under this Act, an officer, director, employee or agent of the corporation who directed, authorized, assented to, acquiesced in or participated in the commission of the offence is party to and guilty of the offence and is liable on conviction to the punishment provided for the offence, whether or not the corporation has been prosecuted for the offence. 1999, c. 12, Sched. N, s. 2 (3).

Where offences deemed to have been committed

10. Every offence against this Act or the regulations and every contravention of any of the conditions of any licence issued under this Act or the regulations, for the purposes of any prosecution, shall be deemed to have been committed, and every cause of complaint under this Act or the regulations or any of the conditions of any licence issued under this Act or the regulations shall be deemed to have arisen in the place where the offence was actually committed or the place where it was first discovered by an inspector or the place where the defendant resides or is found. R.S.O. 1990, c. F.18, s. 10.

Limitation period

10.1 A prosecution for an offence under this Act,

(a) shall not be commenced more than two years after the day evidence of the offence first came to the attention of an inspector; and

(b) shall not be commenced more than three years after the offence was committed. 1999, c. 12, Sched. N, s. 2 (4).

Disposal of fines, etc.

11. The Lieutenant Governor in Council may provide for the disposition of fines imposed for contraventions of this Act or the regulations and for the disposition of any proceeds from the sale of forfeited fish or containers. R.S.O. 1990, c. F.18, s. 11.

Adoptions of regulations under Federal Act

12. The Lieutenant Governor may by proclamation declare any regulations heretofore or hereafter made under the *Fish Inspection Act* (Canada), in so far as they are within the exclusive legislative jurisdiction of the Province of Ontario, to have the force of law therein, and upon the issue of such proclamation the regulations therein referred to, in so far as they are within the exclusive legislative jurisdiction of the Province of Ontario, have the force of law therein as if enacted by the Legislature. R.S.O. 1990, c. F.18, s. 12.

Regulations

13. (1) The Lieutenant Governor in Council may, for the purpose of regulating the marketing of fish and containers locally within Ontario, make regulations,

(a) prescribing grades, qualities and standards of fish for marketing;

(b) prohibiting or regulating the marketing of fish that are not inspected or that are below any prescribed grade, quality or standard;

(c) defining for the purposes of section 7, the expressions "tainted", "decomposed" and "unwholesome";

(d) respecting the handling, processing, storing, grading, packaging, marking, transporting and inspecting of fish;

(e) respecting the quality and specifications for containers and the marking and inspecting of containers;

(f) prescribing the duties of inspectors;

(g) requiring and governing the issue, form, renewal, transfer, refusal and cancellation of licences for establishments and persons handling, processing, storing, grading, transporting or marketing fish, prescribing their duration, territorial limitations and terms and conditions and exempting classes of establishments and persons;

(h) prescribing fees for licences, and for grading and inspection services;

(i) governing the requirements for the equipment and sanitary operation of establishments, and of vehicles used in connection with an establishment or in connection with fishing or the marketing of fish;

(j) prohibiting the marketing of fish or containers under a grade name or standard prescribed by the regulations unless all the requirements of this Act and the regulations with respect thereto have been complied with;

(k) prescribing the manner in which samples of fish may be taken;

(l) prescribing the procedure to be followed in any appeal to the Minister under this Act;

(m) providing for any thing connected with the marketing or inspection of fish and containers locally within Ontario.

Application of regulations

(2) Any regulation may be limited as to area, species of fish, time or otherwise. R.S.O. 1990, c. F.18, s. 13.

Fish Inspection Act
Loi sur l'inspection du poisson

R.R.O. 1990, REGULATION 456

No Amendments

QUALITY CONTROL

This Regulation is made in English only.

INTERPRETATION

1. In this Regulation,

"breaded fish" means fish or fish flesh that is coated with batter and breading;

"can" means any hermetically sealed glass or metal container;

"canned fish" means any fish that is sealed in a can and is sterilized;

"cannery" means an establishment where canned fish is produced for human consumption;

"comminuted fish flesh" means fish flesh that has been ground to a fine, uniform consistency;

"semi-preserving establishment" means an establishment where fish is prepared by salting or pickling in brine, vinegar, sugar, spices or any combination of those salting or pickling agents and packed so that it may be kept fit for human consumption for a minimum of six months by means of refrigeration without freezing;

"shrimp cocktail" means shrimp meat packed with sauce, spices, seasonings or flavourings or any combination of those ingredients; and

"sterilized", in respect of canned fish, means fish that has been treated with heat to prevent spoilage and to destroy all pathogenic organisms. R.R.O. 1990, Reg. 456, s. 1.

2. For the purposes of section 7 of the Act,

"decomposed", with respect to fish, means fish that has an offensive or objectionable odour, flavour, colour or textural defect associated with spoilage;

"tainted", with respect to fish, means fish that is rancid or has an abnormal odour or flavour;

"unwholesome", with respect to fish, means fish that has in or upon it micro-organisms of public health significance or substances toxic or aesthetically offensive to man. R.R.O. 1990, Reg. 456, s. 2.

PART I
GENERAL

3. Fish shall be packed in new, clean and sound containers. R.R.O. 1990, Reg. 456, s. 3.

4. (1) An inspector may detain fish or any container of fish for the purpose of inspection and for the purpose of identifying such fish, the inspector may attach to any of the fish or any container of fish a numbered tag furnished by the Ministry. R.R.O. 1990, Reg. 456, s. 4 (1).

(2) Where fish or any container of fish is detained under subsection (1), the inspector shall deliver or mail to the owner or the owner's agent a notice of detention. R.R.O. 1990, Reg. 456, s. 4 (2).

(3) Where fish or any container of fish is detained under subsection (1) on premises owned by a person who is not the owner of the fish, a copy of the notice of detention referred to in subsection (2) shall be delivered or mailed to that person. R.R.O. 1990, Reg. 456, s. 4 (3).

(4) No person shall move, sell or otherwise dispose of fish or any container of fish detained under subsection (1) unless that person has obtained a release therefor from an inspector. R.R.O. 1990, Reg. 456, s. 4 (4).

(5) Where an inspector is satisfied that,

(a) fish and any container of fish detained under subsection (1) meet the requirements of this Regulation, he or she shall prepare a release authorizing the disposition of the fish for human consumption; or

(b) fish or any container of fish detained under subsection (1) does not meet the requirements of this Regulation, he or she may mark the fish or container accordingly and shall prepare a release authorizing the disposition of the fish for any purpose other than human consumption,

and shall deliver or mail one copy of the release referred to in clause (a) or (b) to the owner of the fish or the owner's agent and one copy to the person, if any, on whose premises the fish was found. R.R.O. 1990, Reg. 456, s. 4 (5).

5. Where an inspector is satisfied that fish and any container of fish meet the requirements of this Regulation, the inspector shall, on request, issue an inspection certificate. R.R.O. 1990, Reg. 456, s. 5.

6. An appeal made under section 4 of the Act shall be made by notice in writing to the Minister within thirty days of the decision of the inspector. R.R.O. 1990, Reg. 456, s. 6.

7. (1) No reinspection shall be ordered as a result of an appeal unless the appellant is able to satisfy the Minister that the identity of the fish or containers to be reinspected has been preserved. R.R.O. 1990, Reg. 456, s. 7 (1).

(2) No reinspection shall be ordered as a result of an appeal where the decision of the inspector appealed from is in respect of the presence of a poisonous or harmful substance in or upon the fish or containers. R.R.O. 1990, Reg. 456, s. 7 (2).

8. Where fish or containers have been approved under this Regulation and upon reinspection are found not to meet the requirements of this Regulation, any inspection marks and quality designations on such fish or containers shall be removed or obliterated and any inspection certificate that may have been issued for the fish or containers is void. R.R.O. 1990, Reg. 456, s. 8.

9. All receptacles, including vehicle bodies, boxes, tubs and barrels used to transport fish to or from any establishment shall be clean and shall be disinfected when necessary. R.R.O. 1990, Reg. 456, s. 9.

10. Fish that is intended for human consumption shall be adequately iced or chilled while being held or transported and shall be protected from contamination and the weather. R.R.O. 1990, Reg. 456, s. 10.

11. Fish that is intended for human consumption shall be protected from contamination and the weather during loading and unloading. R.R.O. 1990, Reg. 456, s. 11.

12. Frozen fish, while under the control of a carrier, shall be kept refrigerated in such a manner that, when it is delivered to its destination, the temperature of such fish will not have increased more than 10°F from the temperature at the time it was loaded. R.R.O. 1990, Reg. 456, s. 12.

13. No person shall sell or offer for sale cans of fish,

(a) that have not been properly sealed;

(b) the tops or bottoms of which have been distorted outwards; or

(c) that are otherwise defective. R.R.O. 1990, Reg. 456, s. 13.

PART II
LABELLING

14. No person shall mark or label a container of fish with a quality designation or sell a container of fish that is so marked or labelled unless,

(a) a standard for that quality has been specified in this Regulation or the *Fish Inspection Regulations* (Canada); and

(b) the fish in that container meets that standard. R.R.O. 1990, Reg. 456, s. 14.

PART III
CODE MARKINGS

15. (1) Every carton and case in which containers of fish are packed at an establishment shall be legibly marked on one end in such a manner that the name of the establishment and the day, month and year of processing can be determined by an inspector. R.R.O. 1990, Reg. 456, s. 15 (1).

(2) Every container in which pickled, spiced or marinated fish are packed shall be legibly marked in such a manner that the name of the establishment and the day, month and year of processing can be determined by an inspector. R.R.O. 1990, Reg. 456, s. 15 (2).

16. (1) Every can of fish that is packed in an establishment shall be embossed on one end in such a manner that the name of the establishment and the day, month and year of processing can be determined by an inspector. R.R.O. 1990, Reg. 456, s. 16 (1).

(2) Where a can of fish is embossed with a code marking, a copy of the key to every such code marking shall be sent to the Minister each year before the commencement of processing operations. R.R.O. 1990, Reg. 456, s. 16 (2).

17. Despite subsection 16 (1), any hermetically sealed glass container containing fish is exempt from the embossing requirement referred to in that subsection, if such container or the label affixed to it is otherwise permanently marked in such a manner that the name of the establishment and the day, month and year of processing can be determined by an inspector. R.R.O. 1990, Reg. 456, s. 17.

PART IV
CANNED FISH

18. Canned fish shall be sterilized so that the product,

(a) is free from micro-organisms capable of development under normal conditions of storage; and

(b) does not contain any substances originating from micro-organisms in amounts that may represent a hazard to health. R.R.O. 1990, Reg. 456, s. 18.

19. All canned fish, except canned fish packed in flat drawn cans, shall have sufficient vacuum to ensure that can ends do not bulge when the product is heated to a temperature of 95°F. R.R.O. 1990, Reg. 456, s. 19.

PART V
FRESH OR FROZEN FISH

BREADED FISH

20. (1) Fish sticks for sale in Ontario shall,

(a) if cooked, contain a minimum of 66 per cent by weight of fish flesh;

(b) if uncooked, contain a minimum of 75 per cent by weight of fish flesh;

(c) weigh not less than one ounce each;

(d) be free from defects; and

(e) not be prepared from comminuted fish flesh. R.R.O. 1990, Reg. 456, s. 20 (1).

(2) In this section,

"fish sticks" means uniform, rectangular portions of breaded fish flesh. R.R.O. 1990, Reg. 456, s. 20 (2).

21. Breaded scallops for sale in Ontario shall,

(a) if cooked, contain a minimum of 66 per cent by weight of scallop meat; and

(b) if uncooked, contain a minimum of 75 per cent by weight of scallop meat. R.R.O. 1990, Reg. 456, s. 21.

22. (1) Shrimp cocktail shall be prepared from sound, cooked, peeled shrimp meat. R.R.O. 1990, Reg. 456, s. 22 (1).

(2) Shrimp cocktail shall contain not less than 36 per cent by weight of shrimp meat. R.R.O. 1990, Reg. 456, s. 22 (2).

PART VI
GENERAL CONSTRUCTION AND EQUIPMENT REQUIREMENTS FOR ESTABLISHMENTS

23. The surface of a floor in a wet working area of an establishment shall be sloped for drainage purposes and shall be constructed of durable and impervious material that permits rapid disposal of waste and that can be readily cleaned. R.R.O. 1990, Reg. 456, s. 23.

24. A floor in a dry working area of an establishment shall be constructed of material that can be readily cleaned. R.R.O. 1990, Reg. 456, s. 24.

25. Drains in an establishment shall be of a type and size sufficient to carry off process effluents and water from cleaning operations and shall be equipped with traps or other devices to prevent the entry of gases or vermin into the establishment through the drains. R.R.O. 1990, Reg. 456, s. 25.

26. The inside surfaces of walls in a wet working area of an establishment shall be constructed of smooth, durable, waterproof and light-coloured material that can be thoroughly cleaned up to a height of not less than four feet. R.R.O. 1990, Reg. 456, s. 26.

27. Every room in an establishment in which fish is processed shall have a ceiling that is free from cracks, crevices and open joints and is constructed of smooth, light-coloured material that can be readily cleaned. R.R.O. 1990, Reg. 456, s. 27.

28. Every establishment shall be equipped with a natural or mechanical ventilation system that will provide clean air, remove undesirable odours, steam and smoke and prevent condensation in rooms where work is performed. R.R.O. 1990, Reg. 456, s. 28.

29. Every establishment shall contain toilet facilities that are constructed and located in such a manner as to prevent the contamination of the establishment or the water supply of the establishment. R.R.O. 1990, Reg. 456, s. 29.

30. The room in which a toilet facility in an establishment is located shall,

(a) have self-closing doors;

(b) be ventilated to the outside;

(c) have walls and a ceiling that are smooth, light in colour and that can be readily cleaned; and

(d) have a floor that is constructed of impervious material and that can be readily cleaned. R.R.O. 1990, Reg. 456, s. 30.

31. Every establishment shall be provided with sanitary washbasins in locations that are visible from the working area, equipped with hot and cold running water, liquid or powdered soap and air dryers or single service towels. R.R.O. 1990, Reg. 456, s. 31.

32. (1) Every establishment shall be provided with a supply of potable water that has a coliform bacteria count of not more than two per hundred millimetres and is under a minimum operating pressure of twenty pounds per square inch. R.R.O. 1990, Reg. 456, s. 32 (1).

(2) Despite subsection (1), an establishment may be provided with water other than water referred to in subsection (1) for fire protection, boilers or auxiliary services provided that there is no connection between the water system used for fire protection, boilers or auxiliary services and the system providing water for other purposes. R.R.O. 1990, Reg. 456, s. 32 (2).

33. The frames and legs on all equipment on which fish is processed shall be constructed of metal or other durable and impervious material, other than wood, that can be readily cleaned. R.R.O. 1990, Reg. 456, s. 33.

34. A table in an establishment shall be so constructed that it and the area beneath it can be readily cleaned. R.R.O. 1990, Reg. 456, s. 34.

35. (1) A bin or receptacle in which offal is stored shall be watertight, constructed of metal or other durable and impervious material, other than wood, and, where necessary to prevent contamination of the establishment or any fish processed in the establishment, be equipped with a well-fitted cover. R.R.O. 1990, Reg. 456, s. 35 (1).

(2) A concrete or other impervious surface, sloped for drainage purposes, shall be placed under an elevated offal bin. R.R.O. 1990, Reg. 456, s. 35 (2).

36. No wood shall be used in the construction of a conveyor in an establishment where the wood will come in contact with fish. R.R.O. 1990, Reg. 456, s. 36.

37. Flumes for conveying fish shall be constructed of non-corrodible material, other than wood, that can be thoroughly cleaned. R.R.O. 1990, Reg. 456, s. 37.

38. Every working surface in a processing room in an establishment shall be provided with an illumination having a minimum intensity of twenty foot-candles. R.R.O. 1990, Reg. 456, s. 38.

PART VII
ADDITIONAL CONSTRUCTION AND EQUIPMENT REQUIREMENTS FOR CANNERIES

FRESH-FISH, FREEZING OR SEMI-PRESERVING ESTABLISHMENTS

39. No cannery and no fresh-fish, freezing or semi-preserving establishment shall have exposed pipe over any working surface on which fish is processed. R.R.O. 1990, Reg. 456, s. 39.

40. Every cannery and every fresh-fish, freezing or semi-preserving establishment shall be provided with hot water that is maintained at a minimum temperature of 110°F in sufficient quantity for the operations of the cannery or fresh-fish, freezing or semi-preserving establishment, as the case may be. R.R.O. 1990, Reg. 456, s. 40.

41. Every cannery and every fresh-fish, freezing or semi-preserving establishment shall be provided with facilities for disinfecting the protective hand coverings used in processing areas. R.R.O. 1990, Reg. 456, s. 41.

42. Every cutting, filleting and skinning board in a cannery and a fresh-fish, freezing or semi-preserving establishment shall be made of planed lumber or other material that is smooth and without cracks. R.R.O. 1990, Reg. 456, s. 42.

43. Every surface in a cannery and a fresh-fish, freezing or semi-preserving establishment, other than a cutting, filleting and skinning board on which fish is processed, shall be made of a non-corrodible material, other than wood, and every joint on the surface shall be smooth and watertight. R.R.O. 1990, Reg. 456, s. 43.

44. Every receptacle, tray, tank, vat and utensil used for processing fish in a cannery and a fresh-fish, freezing or semi-preserving establishment shall be made of a non-corrodible material, other than wood, and shall have smooth surfaces free from cracks and crevices. R.R.O. 1990, Reg. 456, s. 44.

45. Every box, cart, bin and other receptacle used in a cannery and a fresh-fish, freezing or semi-preserving establishment for holding fish, other than live fish, before it is further processed or shipped, shall be constructed so as to provide drainage and, where made of wood, be constructed of planed lumber or waterproof plywood and be coated with a durable and waterproof material free of contaminants. R.R.O. 1990, Reg. 456, s. 45.

46. Every conveyor belt in a cannery and a fresh-fish, freezing or semi-preserving establishment that comes in contact with fish, other than canned fish or packaged fish, shall be fitted with a spray washer and, where practical, a scraper. R.R.O. 1990, Reg. 456, s. 46.

47. No person shall use a wire mesh utensil in processing fish in a cannery or a fresh-fish, freezing or semi-preserving establishment. R.R.O. 1990, Reg. 456, s. 47.

48. No person shall use an enamelled utensil in processing fish in a cannery or a fresh-fish, freezing or semi-preserving establishment. R.R.O. 1990, Reg. 456, s. 48.

49. Every cannery shall be provided with steam of a supply and at a pressure sufficient for the operations of the cannery. R.R.O. 1990, Reg. 456, s. 49.

50. Every freezing facility in a fresh-fish, freezing or semi-preserving establishment shall be capable of reducing the temperature at the centre of a one-inch thick block of unpackaged fillets to −5°F in two hours or less. R.R.O. 1990, Reg. 456, s. 50.

51. (1) Every freezing facility in a fresh-fish, freezing or semi-preserving establishment where round or dressed fish is blast frozen shall be capable of freezing fish by means of air at a temperature of −20°F or colder, moving at a velocity of not less than four hundred feet per minute. R.R.O. 1990, Reg. 456, s. 51 (1).

(2) Where fish is frozen by the method referred to in subsection (1), the fish shall be removed from the freezing facility immediately after the temperature at the centre of the thickest section of the fish reaches −5°F. R.R.O. 1990, Reg. 456, s. 51 (2).

52. Every cannery shall be equipped with one or more retorts equipped with,

(a) a mercury-in-glass thermometer;

(b) a pressure gauge;

(c) a steam spreader; and

(d) venting valves. R.R.O. 1990, Reg. 456, s. 52.

PART VIII
GENERAL OPERATING REQUIREMENTS FOR ESTABLISHMENTS

53. No person who,

(a) is known to be suffering from a communicable disease;

(b) is a known carrier of a communicable disease; or

(c) has an infected wound or open lesion on any part of his or her body,

shall be employed in any working area of an establishment. R.R.O. 1990, Reg. 456, s. 53.

54. Every person engaged in handling or processing fish in an establishment shall wash his or her hands thoroughly with warm water and liquid or powdered soap immediately before commencing each work shift and after each absence from duty. R.R.O. 1990, Reg. 456, s. 54.

55. No employee who handles fish with his or her bare hands in an establishment shall wear finger-nail polish. R.R.O. 1990, Reg. 456, s. 55.

56. All waterproof garments in an establishment shall be thoroughly cleaned after each work shift. R.R.O. 1990, Reg. 456, s. 56.

57. No person in an establishment shall smoke or spit in a working area. R.R.O. 1990, Reg. 456, s. 57.

58. Every toilet facility in an establishment shall be maintained in a clean condition and contain a supply of toilet tissue at all times. R.R.O. 1990, Reg. 456, s. 58.

59. All sewage from an establishment, including liquid waste from fish processing operations, shall be disposed of in such a manner that the sewage is inaccessible to flies and the water supply for the establishment does not become contaminated. R.R.O. 1990, Reg. 456, s. 59.

60. Offal and other refuse shall be removed from the processing area of an establishment at least once a day. R.R.O. 1990, Reg. 456, s. 60.

61. No person shall use an offal bin or receptacle in an establishment for a purpose other than the retention of offal. R.R.O. 1990, Reg. 456, s. 61.

62. No person shall permit a dog or other animal to be in an establishment. R.R.O. 1990, Reg. 456, s. 62.

63. Every operator of an establishment shall maintain a rodent and insect control program in the establishment and, where a pesticide is used, it shall be used in such a manner that the pesticide does not contaminate any fish in the establishment. R.R.O. 1990, Reg. 456, s. 63.

64. No unnecessary material or equipment shall be stored in a working area of an establishment. R.R.O. 1990, Reg. 456, s. 64.

65. The grounds and beach of an establishment shall be kept clean. R.R.O. 1990, Reg. 456, s. 65.

66. Every establishment shall be equipped with brushes, brooms, hoses and other equipment and material for the cleaning of the establishment. R.R.O. 1990, Reg. 456, s. 66.

67. Except where it is to be further processed, frozen fish shall be protected to prevent a rise in the temperature of the fish when it is outside a refrigerated area. R.R.O. 1990, Reg. 456, s. 67.

68. Every establishment and all equipment and utensils used in the operation of an establishment shall be kept in good repair and in a clean and sanitary condition. R.R.O. 1990, Reg. 456, s. 68.

PART IX
ADDITIONAL OPERATING REQUIREMENTS FOR CANNERIES

FRESH-FISH, FREEZING OR SEMI-PRESERVING ESTABLISHMENTS

69. Every operator of a cannery shall keep at the cannery a record for a period of not less than twelve months of the sterilization treatment used for each batch of fish at the cannery. R.R.O. 1990, Reg. 456, s. 69.

70. All water used in a cannery for cooling canned fish shall be chlorinated to give a chlorine residual of at least two parts per million. R.R.O. 1990, Reg. 456, s. 70.

71. (1) All fish which are to be canned shall be thoroughly washed prior to canning. R.R.O. 1990, Reg. 456, s. 71 (1).

(2) Round fish shall be thoroughly washed prior to processing. R.R.O. 1990, Reg. 456, s. 71 (2).

(3) Where fish has been dressed, it shall be thoroughly washed prior to further processing. R.R.O. 1990, Reg. 456, s. 71 (3).

72. (1) No ice, other than ice made from water referred to in subsection 32 (1), shall be used in a cannery or a fresh-fish, freezing or semi-preserving establishment. R.R.O. 1990, Reg. 456, s. 72 (1).

(2) Except for fire protection, boilers or auxiliary services, no water, other than water referred to in subsection 32 (1), shall be used in a cannery or a fresh-fish, freezing or semi-preserving establishment. R.R.O. 1990, Reg. 456, s. 72 (2).

73. All protective hand coverings worn by employees in any processing area in a cannery or a fresh-fish, freezing or semi-preserving establishment shall be disinfected immediately after each break in a work shift and at the end of every work shift. R.R.O. 1990, Reg. 456, s. 73.

74. (1) Except for a filleter, skinner, scaler, handler of round or dressed fish or a worker in a frozen storage room in a fresh-fish, freezing or semi-preserving establishment, every employee engaged in a fish processing operation in a cannery or a fresh-fish, freezing or semi-preserving establishment shall wear a clean coverall, smock or coat and headgear that completely covers the hair. R.R.O. 1990, Reg. 456, s. 74 (1).

(2) All protective outer garments worn by an employee in a fish processing operation in a cannery shall be kept thoroughly cleaned. R.R.O. 1990, Reg. 456, s. 74 (2).

(3) A filleter, skinner, scaler or handler of round or dressed fish in a fresh-fish, freezing or semi-preserving establishment shall wear clean outer garments and headgear that completely covers the hair. R.R.O. 1990, Reg. 456, s. 74 (3).

(4) A worker in a frozen storage room in a fresh-fish, freezing or semi-preserving establishment shall wear clean outer garments. R.R.O. 1990, Reg. 456, s. 74 (4).

75. (1) Every utensil that comes in contact with fish before it is canned or packaged shall be thoroughly cleaned and disinfected at least once during each work shift and at the end of each work shift. R.R.O. 1990, Reg. 456, s. 75 (1).

(2) Every utensil referred to in subsection (1) shall be air-dried and stored in a sanitary manner at the end of each working day. R.R.O. 1990, Reg. 456, s. 75 (2).

76. All equipment, including conveyor belts and tables, that comes in contact with fish that is being processed, other than canned and packaged fish, shall be cleaned and disinfected at the end of each work shift. R.R.O. 1990, Reg. 456, s. 76.

77. Every floor in a wet working area in a cannery and a fresh-fish, freezing or semi-preserving establishment shall be thoroughly washed and disinfected daily. R.R.O. 1990, Reg. 456, s. 77.

PART X
ADDITIONAL OPERATING REQUIREMENTS FOR FROZEN-STORAGE ESTABLISHMENTS

78. Every room in a frozen-storage establishment in which frozen fish is stored shall be maintained at a temperature of –15°F or colder. R.R.O. 1990, Reg. 456, s. 78.

79. (1) Every storage room in a frozen-storage establishment shall be equipped with a thermometer or other temperature-measuring device that is located in such a place that it indicates the average air temperature of the room. R.R.O. 1990, Reg. 456, s. 79 (1).

(2) The temperature in a storage room in a frozen-storage establishment shall be read and recorded at least once each day and the record shall be retained for a period of not less than twelve months. R.R.O. 1990, Reg. 456, s. 79 (2).

80. No odoriferous substance shall be stored with fish in a holding or storage room in a frozen-storage establishment. R.R.O. 1990, Reg. 456, s. 80.

PART XI
TRANSPORTATION OF FISH

81. Every vehicle used for the marketing of fish shall contain facilities that,

(a) protect the fish from contamination and weather;

(b) are in good repair and in a clean and sanitary condition;

(c) where fresh or semi-preserved fish are being transported will maintain the fish in a chilled condition; and

(d) where frozen fish are being transported will prevent the temperature of the frozen fish from increasing more than 10°F during transportation. R.R.O. 1990, Reg. 456, s. 81.

Appendix – 2

The following links contain useful reference material for fish processing facilities. If you are unable to access web-based content, please contact the Fisheries Section, Fish and Wildlife Branch, Ministry of Natural Resources at 1-705-755-1907 to obtain a hard copy.

Food Safety Legislation, Policies and Guidelines Related to Fish

Food Safety Legislation:

Ontario:

a) The Fish Inspection Act (Ontario) and Regulations are applicable to those processors who intend to market fish and fish products within the province only.

Fish Inspection Act R.S.O. 1990, CHAPTER F.18
http://www.e-laws.gov.on.ca/DBLaws/Statutes/English/90f18_e.htm

Fish Inspection Act R.R.O. 1990, REGULATION 456, QUALITY CONTROL
http://www.e-laws.gov.on.ca/DBLaws/Regs/English/900456_e.htm

b) The Food Safety and Quality Act, 2001 has provisions to cover the food safety of aquatic food products. The Fish Inspection Act (Ontario) will be repealed when food fish safety programs and regulations under FSQA have been developed by OMAF.

Food Safety and Quality Act, 2001 S.O. 2001, Chapter 20
http://www.e-laws.gov.on.ca/DBLaws/Statutes/English/01f20_e.htm

c) The Food Premises Regulation is applicable to all premises where food or milk is manufactured, processed, prepared, stored, handled, displayed, distributed, transported, sold or offered for sale, with the exception of a private residence.

Health Protection and Promotion Act R.R.O. 1990, REGULATION 562 (Amended to O. Reg. 74/04), FOOD PREMISES
http://www.e-laws.gov.on.ca/DBLaws/Regs/English/900562_e.htm

Federal:

d) The federal Fish Inspection Act and Regulations are applicable to those processors who intend to export fish and fish products inter-provincially or internationally.

Fish Inspection Act (R.S. 1985, c. F-12)
http://laws.justice.gc.ca./en/F-12/index.html

Fish Inspection Regulations (C.R.C., c. 802)
http://laws.justice.gc.ca./en/F-12/C.R.C.-c.802/index.html

e) The Food and Drugs Act and Regulations are applicable to all food products sold in Canada.

Food and Drugs Act (R.S. 1985, c. F-27)
http://laws.justice.gc.ca./en/F-27/index.html

Food and Drug Regulations (C.R.C., c. 870)
http://laws.justice.gc.ca./en/F-27/C.R.C.-c.870/index.html

f) The Consumer Packaging and Labelling Act and Regulations are applicable to all food products sold in Canada.

Consumer Packaging and Labelling Act (R.S. 1985, c. C-38)
http://laws.justice.gc.ca./en/C-38/index.html

Consumer Packaging and Labelling Regulations (C.R.C., c. 417)
http://laws.justice.gc.ca./en/C-38/C.R.C.-c.417/index.html

Policies and Guidelines

The following links outline policies and guidelines for all fish and fish products sold in Canada.

Canadian Reference Listing of Accepted Construction Materials, Packaging Materials and Non-Food Chemical Products
http://www.inspection.gc.ca/english/ppc/reference/cone.shtml

Canadian Bacteriological Guidelines for Fish and Fish Products
http://www.inspection.gc.ca/english/anima/fispoi/guide/bace.shtml

Canadian Guidelines for Chemical Contaminants and Toxins in Fish and Fish Products
http://www.inspection.gc.ca/english/anima/fispoi/guide/chme.shtml

Canadian Guide to Permitted Additives in Fish and Fish Products
http://www.inspection.gc.ca/english/anima/fispoi/product/additi/guidee.shtml

List of Canadian Acceptable Common Names for Fish and Seafood
http://www.inspection.gc.ca/english/anima/fispoi/fishlist/canadahomee.shtml

2003 Guide to Food Labelling and Advertising Chapter 15 - Fish and Fish Products
http://www.inspection.gc.ca/english/fssa/labeti/guide/ch15e.shtml

Health Canada: Policy on *Listeria monocytogenes* in Ready-to-Eat Foods
http://www.hc-sc.gc.ca/food-aliment/mh-dm/mhe-dme/e_policy_listeria_monocytogenes_ready-to-eat_foods_toc.html

Information Bulletin: Smoked Fish: Storage Conditions
http://www.inspection.gc.ca/english/fssa/labeti/retdet/bulletins/smofume.shtml

Information Bulletin: Seafood: Retail
http://www.inspection.gc.ca/english/fssa/labeti/retdet/bulletins/seamere.shtml

Food Recalls: Make a Plan and Action It! Manufacturers' Guide
http://www.inspection.gc.ca/english/fssa/recarapp/rap/mg1e.shtml

Suggested Web sites for General Food Fish Safety Information

General information on Food Fish Safety with an international perspective is available on the following web sites:

Canadian Food Inspection Agency (CFIA), Animal Products Directorate Fish, Seafood and Production

The purpose of the Fish, Seafood and Production Division is to develop and promote appropriate product and process standards that contribute to the achievement of acceptable quality, safety and identity of fish and seafood products, and to provide reasonable assurance of compliance with these standards.
http://www.inspection.gc.ca/english/anima/fispoi/fispoie.shtml
Including information on the Quality Management Program for Canadian exporters of fish and fish products:
http://www.inspection.gc.ca/english/anima/fispoi/qmp/qmppgqe.shtml
Food and Agriculture Organization (FAO) of the United Nations/ World Health Organization (WHO), Codex Alimentarius

The Codex Alimentarius system presents a unique opportunity for all countries to join the international community in formulating and harmonizing food standards and ensuring their global implementation. It also allows them a role in the development of codes governing hygienic processing practices and recommendations relating to compliance with those standards.
http://www.codexalimentarius.net/web/index_en.jsp
To search for official Codex standards for fish, under category select "fish and fishery products" and then select search:
http://www.codexalimentarius.net/search/advancedsearch.do

U.S. Food and Drug Administration (FDA), Center for Food Safety and Applied Nutrition (CFSAN) – Seafood Information and Resources

The U.S. national regulatory authority for public protection and seafood regulation is vested in the FDA. The FDA operates an oversight compliance program for fishery products under which responsibility for the product's safety, wholesomeness, identity and economic integrity rests with the processor or importer, who must comply with regulations.
http://vm.cfsan.fda.gov/seafood1.html

Suggested Web sites for Seafood HACCP (Hazard Analysis Critical Control Point) and GMPs (Good Manufacturing Practices)

Information on general HACCP, seafood HACCP and GMPs is available on the following web sites:

Ontario Ministry of Agriculture and Food (OMAF), HACCP Advantage

The HACCP Advantage has been developed as part of the initiative underway by OMAF to develop a HACCP approach and HACCP recognition framework for non-federally registered food processors. The program has been designed to be practical and feasible for all facilities, regardless of its size, commodity produced, or volume processed.
http://www.gov.on.ca/OMAFRA/english/food/inspection/haccp/index.html

Including the HACCP Advantage Program Manual:
http://www.gov.on.ca/OMAFRA/english/food/inspection/haccp/haccp_pdf/haccpadvprgmanfinal.pdf

CFIA Example QMP Plans

The following Example QMP Plans were developed jointly by the Fish Inspection Directorate, CFIA and industry. These Plans are meant to be used a guide only and should not be interpreted as adequate for your processing facility or products. It most cases, these plans have been made as generic as possible and do not necessarily reflect the level of detail required.
http://www.inspection.gc.ca/english/anima/fispoi/qmp/files/planse.shtml

U.S. FDA-CFSAN Fish and Fisheries Products Hazards and Controls Guidance

This guidance represents the agency's current thinking on the hazards associated with fish and fishery products and appropriate controls for those hazards.
http://www.cfsan.fda.gov/~comm/haccp4.html

U.S. National Seafood HACCP Alliance, Compendium of Fish and Fishery Product Processes, Hazards, and Controls

The "Compendium of Fish and Fishery Product Processing Methods, Hazards and Controls" is designed as a companion document to the U.S. Food and Drug Administration's "Fish and Fishery Products Hazards and Controls Guide" and the Seafood HACCP Alliance's "HACCP: Hazard Analysis Critical Control Point Training Curriculum." The Alliance intends to revise and reissue this Compendium from time to time as the state of knowledge advances relative to fish and fishery product processes, hazards and controls.
http://seafood.ucdavis.edu/haccp/compendium/compend.htm

Seafood HACCP Alliance, Generic HACCP Plans
These examples of generic seafood HACCP plans are for your information only. They should not be used without modification. Each HACCP plan must be specific for the processing plant, species processed, and processing methods used.
http://www-seafood.ucdavis.edu/haccp/Plans.htm

Seafood HACCP Alliance, Sanitation
General information on GMPs, Hygiene, and Sanitation controls.
http://www-seafood.ucdavis.edu/sanitation/sanitat.HTM

New Zealand Food Safety Authority, Fishing Industry Council Guidelines

New Zealand guidelines for the fish processing industry.
http://www.nzfsa.govt.nz/animalproducts/seafood/guidelines/index.htm

Suggested Websites for Training and Education Materials and Opportunities

Information for Training and Education for the safe processing of seafood is available on the following web sites:

OIMP Food Handler Training and Education
The Ontario Independent Meat Processors (OIMP) provide training and education through distance education courses, hands-on workshops and educational seminars.
http://www.oimp.ca/training.htm

Guelph Food Technology Centre

Training courses including the Good Manufacturing Practices in partnership with OMAF.
http://www.gftc.ca/index/training.cfm

U.S. National Seafood HACCP Alliance for Training and Education

The Seafood HACCP alliance training materials are designed for persons working in commercial and regulatory settings or related professions that can influence and/or involve seafood product safety. In keeping with the FDA HACCP mandate for fish and fishery products, this course focuses on product processing which can relate to production, importing and additional commerce.
http://seafood.ucdavis.edu/haccp/training/materia.htm

Including slides to accompany the "HACCP: Hazard Analysis and Critical Control Point Training Curriculum".
http://seafood.ucdavis.edu/haccp/training/slides/haccpslide.htm

U.S. Department of Commerce – Seafood Inspection Division
The USDC Seafood Inspection Division offers training for people involved in every aspect of seafood.
http://seafood.nmfs.noaa.gov/HACCPSensory.htm

British Columbia Institute of Technology
School of Health Science, Fish Harvesting and Processing Technology, a series of CD-ROM tutorials for processing plants.
http://www.bcit.ca/health/fish/tutorials